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Rev. F. R. BURROWS

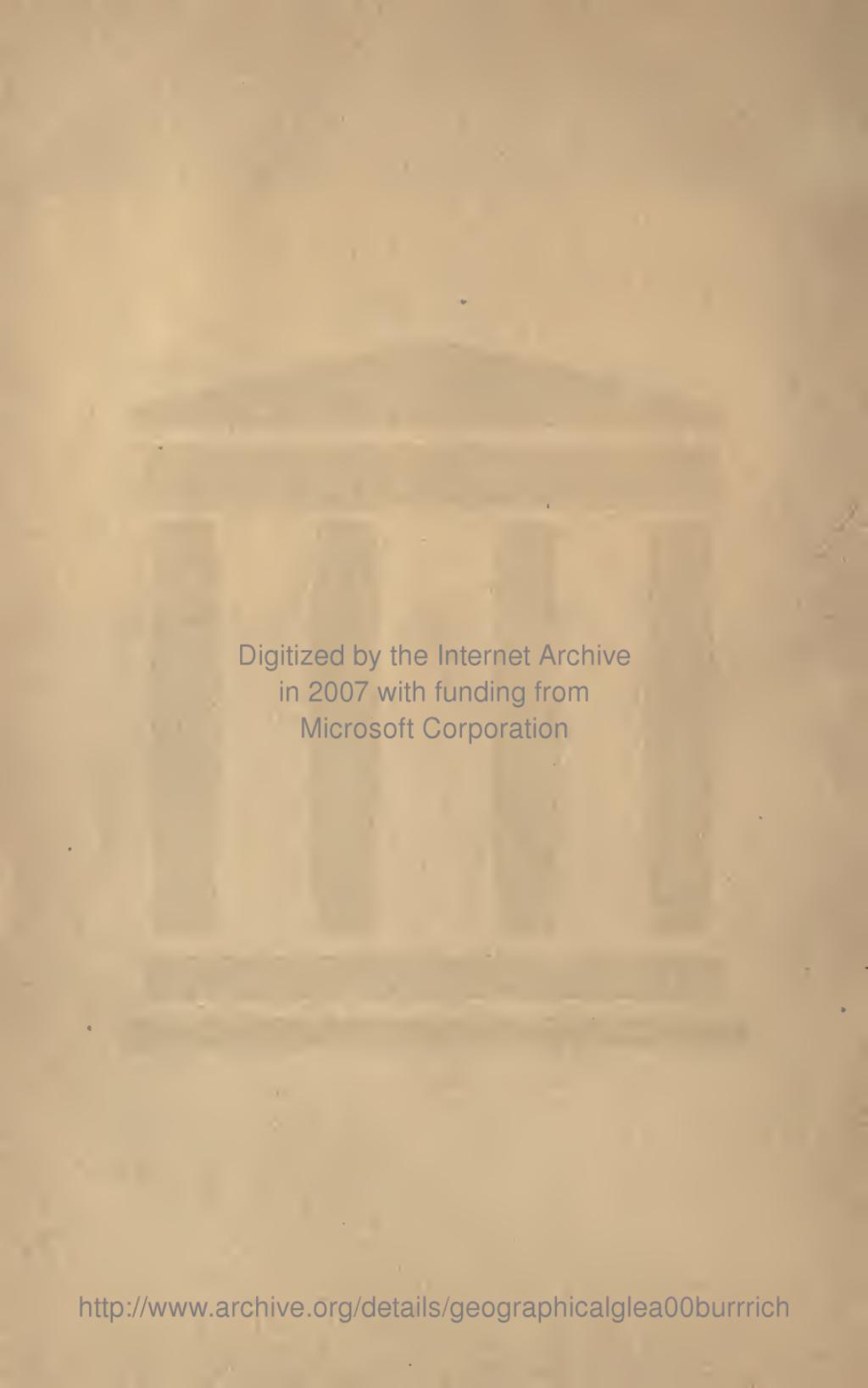
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GEOGRAPHICAL GLEANINGS

PART I.—“On Some Methods of Teaching Geography”

PART II.—On the Preparation and Teaching
of the Subject

By the
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1906

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GENERAL
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DEDICATED (BY PERMISSION) TO
THE RT. HONBLE. LORD CURZON OF KEDLESTON
GOLD MEDALLIST OF THE ROYAL GEOGRAPHICAL SOCIETY, IN MEMORY
OF HIS YOUTHFUL PROMISE AT OXFORD, AND IN ADMIRATION
OF HIS MANHOOD'S ACHIEVEMENTS BY ANOTHER
FORMER PRESIDENT OF THE UNION

Preface

IT has long been my hope that amongst the subjects taught in all schools Geography should have a fair proportion of time and attention. I have seen many signs of late that persevering efforts to press its claims on various bodies are beginning to produce some effect. I have therefore attempted to bring together some facts which shall be of use to my fellow teachers, and also help forward the cause to which I am so much attached.

I am well aware that there are many books already written on this subject and that very largely teachers can be their own best guides: but it is not always possible to get such books, and my experience has taught me that those who teach best are the best also to learn. All such would therefore be willing to follow the guidance of one who has, at all events, done what he could to make Geography interesting and of permanent value. I have had some experience of the manner in which the subject has been taught in many schools,¹ and the conclusion to which I came was that many men were willing to do more for it, and to make more of it, if they were encouraged by its inclusion in the list of compulsory subjects in examinations and therefore in schools. The Preparatory Schoolmaster was waiting for the Public School. The Public School was waiting for the Universities or the Army and other Examination Boards. If, as I believe, the untiring efforts of the Geographical Association are being crowned with success, no longer need we be met by that vicious circle. I need not mention the names of those to whom this reformation is due; they occur at once to the minds of all students of Geography. I should like to dedicate this book to them were it not that I had found one whose claims as a Geographer are almost as

¹ See my report buried in vol. 6 "Board of Education Special Reports," 1900.

great as those which his many friends make for him as a Statesman.

The singular manner in which English people go to war, hoping, as Lord Rosebery said, "to muddle through somehow" has an exact parallel in their past ways of carrying on schools. It has been the custom to make out timetables and to endeavour to fit the teachers and the taught to them : in the process the authorities have closely followed the manner of that celebrated highwayman of Athens who tied his victims upon an iron bed and, as the case required, either stretched out or cut off their legs to adapt them to its length. Amongst other victims to this process have been the masters who have been told to "teach Geography." A general impression prevails that while you certainly require an expert for Mathematics or Latin Prose, to say nothing of Science, almost any one can teach "English subjects," and when gentlemen have applied for posts on my teaching staff they usually concluded the list of their acquirements with "the usual English subjects, etc., and am good at Association Football." I am merely writing of one particular type of school, but I know how widespread is the heresy that men and women can take classes in Geography without any special training. I began to teach myself to teach in 1879, I have my old notebooks by me still, and am glad to find questions for Test-papers in Geography which show that I was beginning to make out the lights of the harbour of truth through the fog of Statistics. I have been learning to teach ever since then ; that is true in a double sense. I have been reading in order to teach, and have been observing my classes when teaching. They have varied in age from seven years to twenty, but of one thing I am certain : that very few of them from the Army candidate who had come from a Public School to the child who wept at parting from his mother, in my twenty-six years had been taught Geography properly.

The day of better things has dawned. From the accompanying list it may be seen that there is quite a literature on the teaching of Geography. The Board of Education has put out regulations and has suggested a syllabus. The Universities of Oxford and Cambridge have recognized the subject. There is every disposition to treat Geography seriously ; sometimes,

perhaps, the new student of the subject may even think somewhat too seriously.

In the address which forms the first part of this book and has been before the public for some time, I have expressed fully my views on Geography. It has at all events the merit of earnestness and has elicited letters from teachers as far apart as Beyrouth and Philadelphia. In the reformation now taking place it has had some share. I feel that its appeal will still be welcomed even though things are better than when it was first delivered.

In the second part I have endeavoured to arrange the order in which a teacher should study the many cognate sciences before taking up class work and made some suggestions for the work in school. These are, I fear, lacking in that definiteness and scientific precision which are demanded increasingly in education. I would urge my readers to keep up with the subject by taking in the *Geographical Teacher*, the organ of the Geographical Association, in which the latest ideas and the most practical may be found, and to avail themselves of the courtesy of those in the Library of the Education Department, who have most kindly furnished me with the list that follows of books and articles on the teaching of our subject. I would like to add that amongst these some of the most striking to a learner who is in earnest come from America ; for example, *The New Basis of Geography*, by Redway ; *How to Study Geography*, by Francis W. Parker ; and *Special Method*, by McMurry. I hope that many of us on this side of the Atlantic feel as proud of the thoroughness of the teachers over there as of our own leading men. One most striking instance of this is to be found in the *Geographical Teacher* Summer Number, 1905, entitled "An American Training College Course in Geography," by George W. Hoke, which is well worth reading. Of our own leaders such names as Mackinder, Mill, Herbertson must be noted. A new edition of Dr. Mill's *Hints to Teachers* is in course of preparation.

It must be remembered that so many types of schools are interested in this subject that it is not easy to write very definite instructions for teachers. The subject itself is so very wide that suggestions have to be of a general character. For these reasons I have mainly attempted to make the second

part of general interest, and suggested outlines which can be filled in to suit the circumstances of all who are chosen to teach this valuable and interesting subject. My best wish for them is that I may kindle an enthusiasm which shall animate themselves and their classes. I can promise them that they will be well rewarded, for every hour spent in the study of Geography brings fresh interest, and carries us above the monotony of School to the endless variety of Creation.

F. R. B.

Since writing this Preface I have been permitted to read the proofs of a new book, "A Progressive Course of Comparative Geography," by P. H. L'Estrange, and I think it admirable, so much so that I would like to see it universally used. The questions and exercises carry out my views so well that I have abandoned my idea of adding a number to this book. I cannot pay the author a higher compliment.

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PART I

On Some Methods of Teaching Geography¹

WE are met together to consider how far we can benefit one another by the exchange of opinions and the reading of papers in the matter of our relation to children. As parents we have given to us for a portion of our lives the direction, if not the control, of our children's education, and we must neither acquiesce tamely in every suggestion made from outside, nor refuse, as the manner of some is, every suggestion that comes from others, because we know our own business best. With regard to the training of children at a very early age, no one can speak with greater authority than women, because they in the nature of things come across the young the most. With regard to their development at later stages, parents and teachers seem to me to share the responsibility ; teachers being able to compare children one with another as no parent can, and being also able to watch them amongst their school-fellows, who elicit qualities good and bad unsuspected at home. Amongst other means of training children for fitness to take their place in the world we consider Education, so called, or as children would say "Lessons," an important factor, and the difficult thing is, in the limited time given to such training, to choose subjects which shall, in the truest sense of the word, "Educate." Whether we are right in aiming at conveying knowledge that will at once pay in examinations, or in endeavouring to give accomplishments, I will not attempt to say, because I know how strong is the temptation and how much pressure is put upon us ; but what I do feel very strongly is

¹ Lecture delivered at the Hastings and St. Leonards College for Ladies, February 22, 1896, on behalf of the Parents' National Educational Union, Southdown Branch.

that we have in one subject, and that a neglected one, a powerful instrument for opening the eyes of the children to the world around them, and one which leads so naturally to many other subjects required in education, that I think it deserves our respectful attention and consideration. I believe that studies of history, natural science, and of languages start naturally from Geography (when it is intelligently taught and learnt, as I shall try to describe), and in riper years fall into their natural places. "Perhaps such a dream of education may long remain a dream, but it may help us to realize the worth of Geography, and to look on the study of it in a grander as well as a more rational light than has commonly been done." (J. R. Green.)

First let me call an ideal teacher as witness.

Thomas Arnold, Regius Professor of Modern History in the University of Oxford, and Head Master of Rugby, delivered in 1842 a set of lectures on modern history. In the third lecture he said as follows :—"A real knowledge of Geography embraces at once a knowledge of the earth and of the dwellings of man upon it ; it stretches out one hand to history, and the other to geology and physiology : it is just that part in the dominion of knowledge where the students of physical and of moral science meet together. Let me once understand the real Geography of a country, its organic structure if I may so call it ; the form of its skeleton, that is, of its hills ; the magnitude and course of its veins and arteries, that is, of its streams and rivers ; let me conceive of it as of a whole made up of connected parts ; and then the position of man's dwellings, viewed in reference to these parts, becomes at once easily remembered, and lively and intelligible besides."

This passage is followed by a brilliant exposition of the meaning of the lie of the land in Italy, as illuminating the history of that country, but too long for quotation here. Dr. Arnold was the man who led the way in the reform of our great schools, and I claim him as the pioneer in the reformation of Geographical Teaching. It would be a good thing if all those who have followed him in the first crusade had followed him in the second. No one else has defined with such accuracy the real power of Geography to illuminate study, and it is not every one who has the loyalty to his memory shown by the Dean of Westminster, who wrote his life, and replied to Mrs.

Arnold when congratulated by her on the success of his book *Sinai and Palestine*. "The framework of the book is the result of that sense of the connexion of History and Geography which I have never ceased to enjoy since it was first imparted at Rugby."

The names of Stanley and Arnold are not omnipotent but they are potent. I appeal to them on the threshold of my address, so that we may feel that we are encouraged by such masters in education—education in a wide sense. I will not call them witnesses for the defence, for no one has attacked Geography; nor for the prosecution, lest any think I wish to stir up strife; but let me call them witnesses.

We regard the Parents' National Educational Union as a body which desires to learn how to do better. It has meetings which consist of a paper or speech followed by discussion. The subjects which occupy its attention are mainly concerned with children. The subject of to-day I call a neglected subject, because I have found it such in two public schools in which I have taught, also when preparing young men for the Army, and now when teaching young boys in a preparatory school. Fifteen years ago I wrote as follows: "The science which describes the surface of the earth, and its relations to the other members of the solar system, deserves to be more accurately studied than is usually the case. We generally find modern Geography neglected in schools, and ignored at Universities." Things are better now, but I have a feeling that a great deal has yet to be done before the study of Geography takes its proper place. "It is one which must occupy a foremost place in any rational system of primary education. When the prejudices and traditions of our schools and schoolmasters have passed away—as they must pass away before a truer conception of the growth of a child's mind, and of the laws which govern that growth—the test of right teaching will be found in the correspondence of our instruction with the development of intellectual activity in those whom we instruct." (J. R. Green.)

"In the days of our fathers the ancient classics were the common element in the culture of all men, a ground on which the specialists could meet. The world is changing, and it would seem as if the classics were becoming a speciality. It is our duty to find a substitute. To me it seems that Geography

combines some of the requisite qualities. To the practical man, whether he aim at distinction in the State or the amassing of wealth, it is a store of invaluable information ; to the student it is a stimulating basis from which to set out along a hundred special lines ; to the teacher an implement for the calling out the powers of the intellect." (Mackinder.) Such are the opinions of the most popular historian of our time, and of the Oxford University Reader in Geography;¹ the one dealing with the teaching of the subject to quite young children, the other pleading for its recognition as an element of cohesion in further education. To both these points I desire to address myself.

Now with regard to the teaching of young children. The subject of Geography has to do with the youngest children. Let me again quote from Mr. Green :—" The child's first question is about the material world in which it finds itself. So long as every sight and every sound is an object of wonder, and of the curiosity that comes of wonder, life will be a mere string of 'whats' and 'whys.' With an amusing belief in the omniscience of his elders, the child asks why the moon changes, and what are the stars ; why the river runs, and where the road goes to ; why the hills are so high, and what is beyond them. To answer these questions as they should be answered is to teach the little questioner Geography. The name of *Physical* Geography may never reach him, but he gets a notion of what the earth's form actually is, of the distribution of land and sea, of the relative position of continents and of countries, of the 'why' rivers run, and the 'where' roads run to. As he watches how mountains divide men or rivers draw them together ; how hill-line and water-parting become bounds of province and shire ; how the town grows up by the stream and the port by the harbour-mouth, the child lays the foundation of *Political* Geography, though he never may see 'a table of counties or learn a list of populations. Studied in such a fashion as this, Geography would furnish a ground-work for all after-instruction"—and it is with a view to encourage parents to give their children such a vantage-ground that this subject has been chosen. We are met on the threshold by the difficulty

¹ Written in 1896 before Mr. Mackinder took up his present work as Principal of the London School of Economics.

of teaching little children as they ought to be taught such a subject as Geography. Let us consider the matter. We must be willing to learn for our children and with our children, and we have no right to decline to teach them anything because we do not understand it. We may dismiss from our minds the conventional Geography book. "No drearier task can be set for the worst of criminals than that of studying the Geographical text books such as children are condemned to use." And we may dispense with maps also, as far as regards the children, until they ask for them, though never for ourselves. It is not, I can assure you, a repulsive subject. We talk of fairyland to the children, and they believe in it. There need be no fear of not finding a fairyland in Geography. Father is smoking a pipe. "Why does father smoke ? Answer difficult ; because he likes it. That is a question of ethics. Where does he get the stuff from ? The shop. Where does the shop man get the stuff from ? From America. Where is America ? Over the sea. Which sea ? That way to the west. Which is west ? There are four ways you can go—to the north, to the south, to the east, to the west (draw this on a piece of paper). Then the man sends to the west for the stuff ? Yes. Does it grow like that ? No. What is it like ? It is a plant. Show me where it grows ? (You find America on a globe.) Is that a long way off ? Yes. Is it farther than Eastbourne ? Yes. How long does it take to get there ? Altogether about a week. Oh ! are there any other places as far off ? Yes ; China. Where is China ?—(Globe again.) Why is this thing round The earth is round. Like a ball ? Yes. Oh ! how do we live on a ball ? It is always spinning round so fast that we never notice it. Round what ? Round the sun.—(Pause.) Then the ball has sometimes one side to the sun and sometimes the other ? Yes. Is that why it is dark ? Yes. Oh ! but, mother, tell us about America. Is it like England ? No ; it is a very big country. Is it hot or cold ? Up there very cold ; then like England ; then very hot. Why ?" The wise mother thinks that is enough. "But, mother, tell us all about America another day. Won't you ?" And the wise mother resolves to find out something more about America, and she does tell them another day. What is the result ? Do all the facts remain ? Not all, but a great many. Children *will* talk over things. As

you have many things about which to think they have few. The next move will be that the doll will be put in the box of bricks ; the bricks will be made to look like a steamer, and the steamer with the doll will cross the nursery floor to fetch stuff for father to smoke from "Merica" (not A-merica, but THE-merica I heard it once explained), and the plant will grow in the corner by the fire, and (probably it is the doll's petticoat) be brought back in triumph, and let us hope not set on fire by a stolen match. And the best of it is that it is all real, not make-believe. Another peep into fairyland. "We can't go because it is raining." *Mother, why does it rain?* It comes from the clouds, and they come from the sea. Does the sea come down in rain ? Yes. Where does the rain go to ? To help to make rivers. Do the rivers go to the sea ? Yes. How do they go ? They find the easiest way to the sea, if they cannot go over a stone they go round it ; and the earth is all over valleys. What are valleys, mother ? Well, once upon a time the earth was soft and hot, and then it grew cold and hard outside, and it dried into lumps and hollows, and the lumps are the hills, and the hollows the valleys, and the river must run down, so it goes down to the sea and along the lowest places till it gets there. Are there any rivers near here, mother ? Yes ; would you like to go and see one when it is fine, and see how it runs ? Are there big rivers, mother ? Very big ; so that you cannot see the other side. Show us where there are big rivers. And so with a little patience and a little knowledge the naughty rain that keeps us in makes a little text for a sermonette, and without dragging in knowledge in season and out of season we have opportunity after opportunity of teaching real Geography, not Geography falsely so-called. It is the natural starting point for all the subjects of later training. A teacher labours doubly for the most part, because it is necessary to begin at the very beginning, when home-training might send out children at all events well grounded in something ; and I venture to suggest to all thinking parents that that something in the lifelong interests of their children had better be Geography. I am endeavouring to provide the anxious parent with mind-matter for the feeding of their children, as important as their being fed with body-matter. I believe the childish digestion capable of assimilating such teaching as I have suggested, and I think

we are all quite as competent to teach in such a way, as to teach Arithmetic, French, Latin, or Music ; and I am not aware that any of these subjects flows with such ease from the Bible, with which our little children are familiar, I hope, from their very infancy, as Geography. We begin with the child Jesus, I presume, and show them pictures of Him as He lived and moved, and it is not long before we are asked why He wore those clothes ; and each incident in the Gospels, from the teaching in the Temple to the trial before Pilate, brings in unknown and strange facts. How can we understand the Roman soldier, the garment rent in twain, the taxing of Cæsar, without a constant reference to Geography ? And if our children ask us of the beginning of things, can we not help them to understand the account of Creation by a simple lesson in the earth's early history ? God was preparing a home for man, we say, and first of all it was all dark—the waters covered the earth—there was no dry land. So He made the light, and it is shining still ; and He drew off the waters into the seas, and they are still where He put them, sometimes rough with the storm, and sometimes calm ; and He made the dry land appear, as the waters went down, to be a home for man. He made the plants to grow, and they made the earth fit for animals to live upon, and the plants were food for animals until God made man, who was to live upon the animals who feed upon the plants, who in their turn feed upon the light. I have just been comparing an address on the Principles of Geography, delivered by Dr. Hugh Mill in Dundee in 1891, with the first chapter of Genesis, and allowing for scientific terms found in the later description, I can see no essential difference. One cannot read that first chapter of the Bible without the aid of Geography, in its widest sense, to explain it, and as an inspired account of that which was before man was, I believe we may claim it as an ideal lesson in Geography—by which I mean that the circumstances are arranged in order, each leading on to each in an evolution grander than any other evolution, because it is the Master Architect revealing His design. I am sure that the simplicity of the words appeals to our children, and that taken verse by verse it makes the grandest introduction to the study of the Bible, for which purpose indeed it was written ; and the child who has learnt that chapter with intelligence and love—who finds that the heavens above,

the waters around him, and the very earth beneath his feet, are as God meant them to be, and because God meant them to be—will look with reverence on his globe or his map in after years. *The teaching of God must not be left to children's services, nor relegated to Sunday.* If He has taught us in the Bible, He has also surrounded us with facts which witness to Him, and those facts are nowhere to be found in more profusion than in the tides which wash our shores, those hills and valleys which make up our landscapes, those showers which nourish our fields and fill our streams—in a word, those surroundings of man in his earthly home which Geography describes, and for which she lives and moves and has her being.

I am told that the horizon-line is nearer or farther off according as I stand upon a plain, or I ascend a height. I would desire for the little children that they should ascend as high as possible to see as far as possible. They may be taken along so many lanes, and between so many high hedges, that they arrive at manhood with only a sensation of dusty boots. There must be an elevation of view point before we arrive at an elevation of character, and with earnestness I plead that they may be allowed a good look round. I would ask that the words of John Richard Green should be thought over :—“Geography is the natural starting point for all subjects of future training.”

Let us go a stage farther on. I feel sure that the boy when he is passing through school is puzzled by the want of connexion or cohesion between the things which he is set to learn. School is a time-table varied by impositions. He finds one man who considers Latin prose more essential than anything else, another who thinks that mathematics are everything, another whose passion for science absorbs him, and the boy's critical faculty is strained. When he observes that English or history or geography are relegated to odds and ends of time, and to any one who can teach nothing else, he follows the lead and probably despises any one of those subjects or all.

With what astonishment would he gaze upon an invader into his class-room, who should say to him, “*All knowledge is one, but the extreme specialism of the present day hides the fact from a certain class of minds.*” And with what eyes of wonder would he further gaze upon any one who should say, “*And the centre point from which to start is Geography.*”

Miss Busk says—"The magnitude of its educative value will be realized when teachers understand that it is a subject which develops the child's ability in many different directions, rather than along any one special line, and renders the mind more receptive of new ideas in very varied fields of knowledge."

To a child it seems the least of all things. Exactly as he will imitate the handwriting of his master, so will he follow his manifest bent—and if he find that the manufacture of indifferent Latin verse is considered to be education, so will he manufacture imitations of his master's imitations—a long, long way after Latin models. To what purpose is this waste he never inquires; and if at some future time he grows to man's estate and looks back on his school days, he will be complacent, not regretful, and for that let him be thankful. For us a different method of education is necessary. We must consider what is the best for our young folk, what tends to culture.

Professor Laurie says—"After all, what is culture? We readily grant that a man who can turn out neat verses in Latin and Greek is a man of culture, not because of the verses he produces, but because the skill he displays is evidence that he has gone through a long course of linguistic training. Such accomplishments are, as a matter of fact, seldom found in conjunction with culture in its truer and larger sense. If I find a man with command of his own powers, with an open intelligence, with interests outside his own personality and his own particular department, with a feeling for the historical past, with a love for art-forms and with high aims in life, I recognize in such a man the true ethical habit of mind, and him I would call a man of culture." It is not in dexterity of manipulation that culture is manifested. *It is the ethical outcome that is culture.* During the years of education we are to be thinking of culture. Let me quote a letter just to hand from the Head Master of Westminster¹ :—"You see that to me the only test of the importance of any subject as an instrument of education is not the actual knowledge which it conveys—no boy knows anything—but the activity which it excites in a boy's mind." What then best excites the youth-

¹ In 1896 Dr. Rutherford.

ful mind? If I were asked I should say Mathematics, Latin, History and one or two Foreign Languages. These I should place in one department as essentials of the first kind. Personally I love Greek, but I fear it is not possible to have it for every one. Then in my second department, as essentials of the second kind, I should group Literature and Geography. School subjects may be divided into specifics and tonics. Miss Busk says:—"Geography is par excellence this kind of tonic, as it touches on and lays the foundation of almost every Science, Mathematics as well as History and Languages." Let me quote here Professor Laurie:—"Geography does not mean the miserable scraps of the modern school. Properly taught it embraces all that is essential for a cultivated man to know of the world of nature, it gives life to History, and lays the sure foundation of commercial, industrial and political knowledge. It is because of its intellectual and moral effects chiefly that it claims a foremost place in the education of youth. There is probably no one subject so prolific of matter for independent thought and judgment on the affairs of life, and the destiny and duty of man. By means of it we extend the sympathies of the pupil and lay the foundation of that sentiment of humanity which is the necessary counterpoise to narrow and parochial prejudices. It tends to comprehensiveness of mind, to the correction of hasty opinions, to the strengthening of patriotism, but at the same time to the moderation of insular insolence. It is a sworn foe to the prig. It widens intelligence and enriches the soul, furnishing nutrition to the ethical sentiments and a stimulus to the imagination."

Wider it could hardly be. Our friend, the Scottish Professor of Education, has no words strong enough to recommend it. He discusses "why" this subject should be taught, and also, in his masterly addresses on Educational Subjects, "what" should be taught. After enumerating the various divisions of Physical Geography, he proceeds to develop the study by what I may call a species of evolution, though it is not that of one type perfecting itself. "How can I speak in any sense of soil and climate, of elevations and depressions and movements of the earth, without reference to the plant life and animal life which they support? And how can I

speak of animals and omit man ? And how shall I speak of man without considering types of race—the Mongolian, the Tartar, the Semitic, the Aryan ? When I touch upon Aryan how can I resist the fine field of observation supplied by the species Hellenic, Italic, Slavonic, Teutonic ? ” May I point out in this passage the evidence for the truth of my former statement that Geography is an element of cohesion ? In the earlier study we must call upon Geology to assist us in the understanding of the lithosphere, then Botany in the study of the plants, Zoology in the study of the animals. Anthropology in the study of man, and from the races mentioned in this passage springs undoubtedly the first lesson in Grammar, or, if you prefer it, in Language—Language that studied by declensions and conjugations is an ingenious puzzle beloved of the unthinking teacher, but, studied by the light of Geography is sense. Let me take that one point of Grammar and illuminate it Geographically. We are supposed to teach English grammar in schools. What more interesting method can we adopt than a rough sketch map of the original starting point of Language, and then of its progress westward and eastward, then of the settlement of certain peoples in Europe, then of the children of the Latin tongue grouped by the waters of the tideless sea, of the Northern Tribes, of the invasion by those tribes of our island and of France, of the Teuton element in our language, of the layer over that of Norman due to French influence, of the union of these elements, of the words that have drifted into our tongue from many lands, of the Arabic “ admiral ” and the Dutch “ yacht ; ” and at the end of our lesson we shall go away conscious that “ English as she is spoke ” is what it is, not because of Grammar—only an after-thought and unhappy at that—not because of History, nor of Philology, but because of poor despised Geography.

When we pass from the study of Language to that of peoples, let us suppose again, in another department, that we desire illumination. How do we account for the difference between peoples—why should China still be one empire, or Switzerland full of cantons ? “ Look at the vast alluvial plains watered by the Nile, the Euphrates, the Ganges, and the Yellow River. The soil is rich, the wants of the people few, the inducement to exertion small. There you have found, in all

ages of the world a teeming population agricultural and stationary, attached to the soil, conservative in habits of thought, easily subjugated and there have been appropriately placed the great despotic monarchies. On the other hand, look at small maritime states like ancient Phoenicia, Greece and Italy. Separated by ridges of hills, inhabited by little communities, isolated, yet compelled sometimes to fight for their liberty: hence jealous of each other and hence self-asserting, their history full of records of intestine divisions and of heroic struggles for liberty. Here you cannot fail to see a connexion between the free vigorous life of early Rome and of the Etruscan and Greek Republics." (Sir J. Fitch, *Lectures on Teaching*.)

I believe that Geography has the clue to the labyrinth of History. "Nobody can read Livy's account of Hannibal's passage of the Alps, Macaulay's *Siege of Londonderry*, Mr. Carlyle's account of Frederick the Great's campaign in Silesia, or of Cromwell's *Battle of Dunbar*, without seeing a new meaning in geographical study." (Fitch.) Dr. Henkel of Dresden says:—"America.—All European culture proceeded from the Mediterranean; but when the Latin and Germanic races had once seized the Atlantic, after the long struggles of the mediaeval period, History burst through the narrow Mediterranean limits, swept over the ocean and found a new soil in the transatlantic continents. On the banks of the gigantic rivers of Asia the human mind had been fettered under the spell of nature: in the transatlantic world the human mind emancipated itself from nature and stamped her with its own signature. And as in the ceaseless changes of the sea encompassing the continents the waters proceed from and return to it, thus all human culture turns to the ocean and returns from it to new social and political foundations."

I imagine few methods of teaching History are more profitable than those which make the study of Geography essential, and I will venture to say that no one can teach History without Geography. One of the things that strike me so much is the strange divorce between ancient history and modern. A man of sense will study both side by side, and the common ground will be Geography. That is to say, the form of the land and sea remains the same, and he can easily sub-

stitute ancient names for modern. He then realizes that events happened. He can follow his conquering general from land to land, from town to town, and study the ancient History by modern Geography, as did the third Napoleon in his book on Caesar. "Instead," says Sir Archibald Geikie, "of being a mere exercise of the memory, Geography steps at once into a foremost place amongst school subjects as an instrument for training various mental qualities that are hardly reached at all by the other branches of an ordinary curriculum. It calls out into active exercise the observing faculty, which is otherwise left well-nigh dormant in the ordinary tasks of school. It furnishes a just conception of the fatherland in all its aspects, and passes thence to broad and intelligent views of the world at large."

The handmaiden to Grammar, to History, and to Science—whether Geological, Botanical or Astronomical—Geography is useful for the purpose of education, as a cultivator of thought and an intelligent guide in the mysteries of the past, present and future. How much can she claim to be heard as practical, as useful to the young man or woman in after life? I speak to those who live in the centre of a world-wide Empire, for like the centre of a circle Great Britain is but a spot in the middle. How can we estimate our heritage properly without study of it in maps? India, Canada, Australia, are they names or are they realities? The intelligent student of our position as a first-rate power can but confess that without our colonies we can hope for little recognition.¹ Our weight in the councils of the nations can be lessened, and only in this manner lessened, if we decline our responsibilities and leave our colonies to shift for themselves. No one can say that he knows anything about his country unless he can prove himself familiar with her outlying dominions. The practical effect of the knowledge that comes from the study of Geography, as far as it relates to our possessions beyond the shores of these little islands, is to make a man or woman a true citizen, with patriotism that is above party—and while such a citizen is aware of our greatness, he is aware of our weakness. The long lines of communication that connect us with our outposts may be

¹ Imperialism has become popular now, and I am a little proud of this forecast.

broken and must be kept up. The ever-increasing food supply must be from friendly, not merely neutral, and certainly not hostile ports. If we keep ourselves insulated we shall become isolated—and therefore it is of immense importance to the young to learn how we can improve our commercial relations with distant lands. For instance, a certain proportion of young men will go into trade, and it would be well if they realized how vital it is to commerce to be ready not only to open up new lands, but to be able to deal with those who are found to inhabit them. We should hear, if boys had been taught Geography properly, of men who could understand a country and its formation when they got there—to whom minerals would be familiar, and who would not disdain to meet the taste of natives by superior articles of trade—even endeavouring in design to please their customers. It is a mistake to imagine that all so-called savages are ignorant. They have taste, and much native work is superior to the product of civilized countries. But let me suppose that it will not be the lot in life of our boys to be in trade with foreign countries, or to go out as colonists or explorers, and that they go into one of the two services—the army or the navy. I will undertake to say that the soldier is twice a soldier who can read a map and can draw a map. He who reads the history of the war of 1870 can see at a glance that on the French side there was ignorance of Geography, on the German knowledge, and I was much struck by a statement that I read lately, that a German officer when told of the movement of the French troops from Chalons, pointed to Sedan as the place where the final combat must and did take place. I need not say that for defence of our native land, not only should soldiers be well acquainted with the mere outline of our surface, but with the character of the sea surrounding our coast. And as to the navy it passes my comprehension how any one could say that the officers of that service should be ignorant, and as one gallant officer suggested, “Pick it up as they went along.” You might as well learn the character of a coast by being wrecked on the rocks. Our navy is too valuable to be officered by gentlemen who do not know their way about. The practical results of proper teaching in such cases as those of men engaged in trade, commerce, or in either

of the services, I need not say are immense. To what end, therefore, should we teach the lawyer, the clergyman, the artist, the architect ? (I will not say the civil engineer for he lives on Geography.) I will reserve for the moment the question of general culture. I should certainly think that a clergyman with a sense of Geography might help his congregations in his sermons. I have already alluded to the teaching of the first chapter of Genesis, that sublime epitome of Creation. I feel sure that a man who is teaching from the Bible which deals with Solomon and his great kingdom, Daniel, Ezra, Nehemiah, and their connexion with greater kingdoms still, literally must be fairly well up in Geography. How else can he trace the growth of the Infant Christian Church, beginning at Jerusalem then spreading through the half-forgotten tribes of Asia Minor till, reaching the cultivation of Athens and Rome, it at last grew to the Mustard Tree which had been foretold by its Founder. I do not think he is fit to talk of missions until he knows where missions are ; and if he has grasped his Geography aright, he will learn and will teach his people the causes of the slow growth of Christianity in regions where it comes in contact with religions—bone of the bone and flesh of the flesh of the people. He will not expect in Pekin the converts of Uganda, or the success of Travancore in the capital of Persia. He who knows Geography knows missions.

I imagine the work of both artist and architect would be assisted by familiarity with the history of the nations as shown by study of the world's Geography. The subjects of the pictures of a man who knows somewhat of the waves of invasion that have passed, for instance, over India or Spain are endless, and even in landscape it is not only the colour that appeals to the eye, but accuracy in depicting the conformation of the ground. I believe that it is necessary to understand anatomy before one succeeds in painting the human figure, and I am certain that a knowledge of geology—as much as is needed for Geography—will make the painter's mountains, hills and valleys more accurate. As to lawyers, if one speaks only of the Bar, there is, I believe, no subject in which it is not well for the barrister to be proficient, and the numerous professional men, such as agents for land and surveyors, might well be trained in Geography when young. One of the best ways of

beginning Geography is to train children to make maps of the place in which they live, which not only enables them to find their way about intelligently, but prepares them for more extended work if their profession or inclination require it hereafter. I need not say that in considering the future employments of children, I would not omit that of Teacher. In that noble profession the need of trained teachers in every department is obvious, and our sincere hope is that we may have growing up amongst us a generation trained to teach Geography in its fullest and widest sense.

But, to leave the particular callings into which our children may come hereafter, we may very rightly consider what a flood of light can be shed upon our life and on theirs by an intelligent knowledge of Geography. Let us take a library and consider its contents, and the point will seem clearer. A large proportion of the books will be books of travel and adventure. With what additional interest can we read if we know where we are. The African, the Asiatic, the American traveller can be followed with real pleasure as he or she passes from one place to another, and we travel with them. We do not need to think only of their discomforts, of mosquitoes, of bad food, or hostile tribes, we can in imagination go with them. The explorer is learning how to describe, and his travels are, nowadays, accompanied by one or more excellent maps. Given an intelligent interest in books of travel and you may promise people a course of reading quite as useful and instructive as they desire. I believe, also, that poetical works contain more geographical allusions than we are aware of. A long paper might be prepared on such allusions. I take from the shelves of my scanty library Tennyson's poems—

Ev'n as the warm gulf stream of Florida
Floats far away into the northern seas
The lavish growths of southern Mexico.

Larger constellations burning, mellow moons and happy skies,
Breadths of tropic shade and palms in cluster, knots of Paradise.
Never comes the trader, never floats an European flag,
Slides the bird o'er lustrous woodland, swings the trailer from the crag.

—Locksley Hall.

Illyrian woodlands, echoing fall
Of water sheets of summer glass,
The long divine Peneian pass,
The vast Akrokeranian wall!—*To E. L.*

But when we crost the Lombard plain
Remember what a plague of rain:
Of rain at Reggio, rain at Parma,
At Lodi rain, Piacenza rain.—*The Daisy.*

Then twice a day the Severn fills,
The salt sea water passes by,
And hushes half the babbling Wye,
And makes a silence in the hills.—*In Memoriam, XIX.*

Spenser's *Faëry Queene*, fourth book and eleventh canto, is nothing but a description of the English rivers that came to the marriage of the Thames and Medway. I need only mention Byron, Scott and Milton as full of geographical reference.

With all these literary testimonies to Geography, with all the wealth of interest lying beneath our feet, are we not somewhat like men who live in a country full of mineral wealth, intent upon nothing more than making pretty gardens, or getting pasture for sheep? I thought when I began this paper that there was a concert of opposition to the subject from head masters of public schools and head masters of preparatory schools, but I find, from examining the Report of the Head Masters' Conference in December, that they *would rather welcome boys instructed in the subject*. I find that at great public schools there are enthusiastic teachers of the subject. I find the following in the second number of the *Preparatory Schools Review*, in reply to a suggestion made by the Head of Haileybury that Geography and History should be omitted in preparatory schools—“Geography! teachers, educators, searchers after truth, is not here in reality your subject—all embracing, including all others. From it, in reality, all subjects spring forth, like man himself, and return again thereto. We have in it that single science proposed by the Frenchman, Le Pluy, and now being so industriously developed by Professor Geddes and his workers in Edinburgh—Social Science—a rehabilitated and extended Geography, all absorbing, all embracing, out of which every other science naturally springs. Out of it there come, one after another, Geometry and the measurement of

fields and possessions, Trigonometry and map-drawing, Astronomy and shipping, Mathematics and mechanics, engine and bridge building, ancient history and classic languages, agriculture and colonization, work and recreation, poetry, painting and music." To quote another teacher—a lady this time—"Until specialists in History, Languages, and most of the Sciences, are willing not only not to look down on Geography as beneath their notice (such an attitude being a remnant of the former exclusively classical education), but to use it to illustrate their lessons, they will continue to take the life out of them." (Miss Busk.)

I think I may fairly say that many intelligent teachers are in favour of making Geography a really prominent subject.

We need in our schools a *connective element for the work*. The modern teacher is not content to teach Latin one hour and French another. He or she shows how the very forms of the words are common to the languages, and one lesson helps the other. The modern teacher looks for education and finds it not in Grammars nor in Lexicons—valuable though they be—but in the cultivation of the powers of the pupil, granting leave to the flowers to teach, bringing hand and eye to help brain, making sweet sound convey sound sense. For the little ones there must be work, but work which they can do; for the elder ones graduated work all leading on to a point at which the children can leave school, furnished with the power to earn their bread and to understand how things are in the world and how they have been, so as to guide them in the days that come so quick and bring them level with their elders so soon. School and university alike are precious. Too soon the time goes by and the student settles down into the place into which it pleases God to call him. For many there are few opportunities of study in later life; but what is of vast importance is that if you are inclined to pursue a subject so will your interest grow, and to what nobler study can you be inclined in childhood, youth, and age, than that which deals with the home God has given to man on earth. It is not only the length and breadth of the home that you need to know. You will love to consider the lilies God has planted in its garden, to walk by the still waters that lie between their soft banks, to admire the many, many creatures He has settled in its park. You will not forget if you

love your home the things that happened there when you were young, and you will find that the earth too once was young, and its records are graven on tables of stone. You will look up and see the brethren of your mother earth in sky, you will look round and think of beauty on the summer sea and grandeur in the winter gale, you will look below and read the story of the ages in the rocks and sand. For my own part I am not ashamed to say that I look upon true Geography as if she were a fairy queen standing at the gates of a land full of beauty. She has none of the austerity of her sisters who preside over other Sciences, but she has friendly relations with them all. She seems to beckon us within with a gracious smile, as though in her province were things undreamt of in our philosophy—as with a face of eternal calm she muses over the past which enables her to understand the present, and almost to forecast the future. I could not turn away from her if I would, because on her face I read that expression of truth which can ennable even human beings and once shone in perfection by the waters of the lake in Galilee. I cannot bring myself to acquiesce in the neglect which she has so patiently borne for so long, nor dare I to offer the children stones for their hunger when there is enough of bread and to spare from her store. That store she has as treasure in her keeping from an everlasting source, and He who considered the world when it was made as good, still looks upon it with the affection of a father for a child. To understand the objects which He has had in view from the beginning is beyond the vision power of humanity, but to learn from Geography all that she can teach us of the place which He prepared for man as a dwelling-place is not only possible but a duty.

PART II

On the Preparation and Teaching of the Subject : Suggestions for Fellow-Teachers

CHAPTER I

ON THE PREPARATION FOR TEACHING

The teacher will see that a wide range of reading is absolutely necessary to him, and that he must equip himself with such a store of illustrations gathered from all departments of knowledge as will allow him to elucidate each subject as it arises in the course of his tuition.—Sir A. Geikie, *Teaching of Geography*, page 5.

For a list of Books of Reference consult that given on pp. 47-54 in the above mentioned work.

FROM the general defence of the subject in the first part of this book we can now proceed to the arrangement of our thoughts as practical teachers. In the first place I imagine that we should grasp the *order* in which a student should proceed. The clearest statement I have seen is in the article “What is Geography ?” by Mr. E. W. Dann, published in the *Geographical Teacher* of 1905. (No. xiii, Vol. 3, Part 3.)

“The Earth is only part of a great universe, and therefore we should know something of that universe.” Clearly if we are to begin in this way we must make some study of ASTRONOMY. Next we “must know its (the Earth’s) size, its shape, and its constituents as well as its place and importance in the great whole. When we have gained a broad conception of its substance, we can begin to consider its outer crust.” This implies GEOLOGY. Then follow the many things comprehended in the words PHYSICAL GEOGRAPHY which bring us (as I say in

the first part) to BOTANY and ZOOLOGY. Lastly we come to the *Study of Man* and the countries in which he lives. "How far can we go ourselves and how far can we take our pupils?" is a pertinent question of Mr. Dann's and I repeat it.

No explanation of the condition and conduct of **Astronomy**, the Earth is possible without some Astronomy. The Sun, the Moon, the Stars are all related to the Earth, or if we take a more humble and perhaps a more accurate view, the Earth is related to them. The very meridians that are marked on every map are but the record of the passing Sun, and as it were the figures on a mighty clock. The tides that chase round the Earth are following the course of the moon. The passing from one hemisphere to another is indicated by the sight of the Southern Cross instead of our old friend the Great Bear. The land of the Midnight Sun and the Equatorial Provinces, baked in heat, bear witness to the lord of the skies, the mighty Sun. So all the visible universe contributes something to Geography.

In our position, therefore, we must make such a book as Sir Robert Ball's *Story of the Heavens* our own, and in class attempt no more than we find we can teach and the learners understand. Not a few of us bewilder the children by bringing before them too soon facts that seem simple to us and incomprehensible to them. Selection, therefore, from our armoury of the suitable weapons must be our principle. We need not take out our heavy rifle for big game in order to knock over the birds and rabbits. At the risk of bringing coals to Newcastle, I suggest that in teaching we should take some such order as this.

We must suppose that our school is provided with a syllabus or scheme. In the ordinary course we must adhere to that. Let each teacher be free to give one lesson in five on some such lines as the following.

The Sun, 1. The connexion between the Earth and the Moon, rest of the Solar System.
and Stars. 2. The Sun's nature and work.

3. The Earth's view by night of the Moon and Stars. (Most reliable help will be found here in Huxley's *Physiography*,¹

¹ References to this book are to the edition of 1884. A revised edition has been published. 1904. Macmillan 4s. 6d.

Chap. xxi., "The Sun.") If there is a teacher capable of arranging lectures that will suit all classes let there be a course, but while among those who are grown up such is not difficult, in schools it is not far from impossible. Unless one teacher takes all the Geography in the school, and I know from experience that to be an exhausting process for the teacher, it is better that each should train their own class and drill their own section, so to speak. In modern warfare greater reliance is placed on the conduct of sections and their leaders than in the days of advance in columns. The area of the modern battlefield is enormous. So is that of education, and of all subjects in education, of Geography. Let each leader then handle his own section with intelligence. The amount of Astronomy must be chosen by him. In this way the teacher will keep his knowledge fresh and *not* allow this most important branch of the subject to be lost sight of in the ordinary work of the class.

We have all probably been struck by the difficulty placed in the way of the young by the earlier portion of many text-books dealing with Geography. They resemble a terrific obstacle placed at the beginning of a steeple chase. For this we may substitute our own lessons adjusted to capacity. But we must not lose sight for ourselves of the grandeur of our first stage of geographical training. There is something which lifts us out of ourselves in the height and width of such knowledge. Such terms, indeed, seem almost inappropriate. Let us apply them to that which can be measured and not to the infinity of space. We are come to the noblest and grandest of things when we search the heavens above us and in a spirit of reverence read the first chapter of Geographical Knowledge. It is a glorious prelude to the music that will follow. (Of Mathematical Geography, that is so closely related to Astronomy, I will treat in a later section.)

The teacher who has now come down to Earth, *Geology*, must learn enough about its structure to feel at home when the physical features of each country come before him in his course. It will help him to have read the *Text-Book of Geology*¹ and to realize how much depends on that

¹ *Text-book of Geology*. Sir A. Geikie, 28s. Macmillan. Or the *Class-book of Geology*, the same author, 4s. 6d. Macmillan.

science. I quote again from the article¹ in the *Geographical Teacher* for the Autumn of 1905, to which I am so deeply indebted, as follows : "The question of the position of Geology is indeed a difficult one. It is absolutely necessary for the proper understanding of geography to have a good working knowledge of the sister-science. I do not say that it is impossible for the non-geologist to become a very finely equipped geographer, but the two subjects are too closely connected to be regarded as distinct. The one is the ancient history of the other and in places the two are indistinguishable. Geology has a distinct bearing upon scenery, and scenery is a distinct branch of our geographical study. When geology presents us with facts we are glad to utilize those facts in our Geography. Where it is merely speculation and theory we must leave it."

It must also be clear that while we need not attempt to go too far in this science, lest we should lose our sense of proportion, that it furnishes us with the only explanation of the materials, and their disposal, which go to make up the Earth. That, further, it is of great service in gaining knowledge of the Home district. "The Geologist can interest his pupils by his special knowledge of the rocks of the district."² He leads the way for the statistics of mineral products though "he may tremble at the sight of figures." He rivals in his many interests the other great contributors to the chapters of our knowledge. Now it is manifest that all that we have studied so far, leads us to the "many chambered mansion" of PHYSICAL GEOGRAPHY.

It is impossible in this general survey to do much **Physical Geography.** more than impress upon my readers that in this vast area of knowledge one needs, more than anything, clearness. We have to do with the waters that are above the Earth and the waters that are beneath the Earth, as well as the Earth itself. For our own sake we must be familiar with the great general features of the sea and land. Orographical maps, raised maps (allowing for exaggeration) maps that we have filled in ourselves, will help us. I do not find it

¹ *What is Geography?* by Ernest W. Dann, B.A., F.R.G.S., first read to the Manchester Geographical Society, December 13, 1904.

² *What is Geography?* page 99, as quoted before.

difficult to see before me as I write those countries of which I have made maps, though I acknowledge that far too many have been political. I would suggest diagrams of sections across continents, across countries, charts of ocean currents, plans of various groups of lakes, and fairly complete maps of the River Systems of various countries, noting specially where they are aided by canals. Practically, of course, it is not easy to find time to make or room to keep everything one would like, but every such self-made aid is invaluable. One may read a good deal and forget. One draws maps and diagrams, they remain.

Travel is of the utmost use. There are limits in the way of expense, but nowadays a great deal can be done for comparatively little money. I can imagine a delightful holiday for instance beginning with the study of the Reculvers, the old Roman station of Regulbium, near Herne Bay, where the sea has made such inroads that it has destroyed the military wall, while the church, which in the time of Henry VIII was nearly a mile inland, is now on the very brink of the cliff. As the two towers form a well known landmark to mariners a causeway has been constructed on the beach to arrest the progress of the sea. A walk along the shore by Herne Bay in the opposite direction will show many places where the cliffs have fallen and the corn-land been lost. If you desire to study further the precisely opposite phenomenon, you can bicycle over by Minster to the remains of Richborough, the old Roman station of Rutupiae, which you will find looks over wide flats several miles from the shore, whereas it once guarded the entrance to

Isle of Thanet. the channel that separated the Isle of Thanet from the Kentish coast. The Roman fleet sailed through this channel but now only the windings of the Stour remain as a narrow water-way and the island is only one in name. From Herne Bay is an easy journey to Dover, where you will find much of interest, e.g. the boring for coal, and can imagine the time when instead of the stormy channel there was land connecting this country with the Continent, while the chalk cliffs you see there and in France witness to a common formation. You can work your way along the coast from Dover again to Richborough, rescued from the plough and preserved for the archaeologist by the care of

Archbishop Benson and Lord Ashcombe, and stand by the cross which marks the spot where St. Augustine landed on his mission to England. Then you can go to the ancient



The Cinque Ports. port of Sandwich, now far from the sea, with all its calm and reposeful history as a great Cinque Port,¹ from which you can ride to Deal, where you can go

¹ Cf. *History of the Cinque Ports.* Professor M. Burrows.

out and see the Goodwin Sands with boatmen full of stories of wreck. Here too you will see ships of all nations to remind you that the world's commerce still makes for the port of London, and if your journey money carries you further you can go to the Romney Marshes, a fine instance of alluvial deposit, and at the picturesque towns of Rye and Winchelsea renew your study at once of the Cinque Ports, and of the retreat of the sea which has deserted Winchelsea completely and is only connected with Rye by a winding river. You must not omit a visit to Dungeness where a long promontory of shingle, accumulated by the eastward drift from Beachy Head, grows yearly further into the sea, and thence you can finish your tour at Hastings, another Cinque Port, not far from which Battle Abbey will attract you to see the place where, at Senlac, Norman met Saxon and the story of this country for centuries was changed.

Those of us who can go further may make the acquaintance of the mountain scenery of Switzerland, and trace the Rhone from its muddy glacier-fed stream, at one end of the lake of Geneva, till it issues in its strength and clearness at the other.

A delightful trip may be made from Hull or Newcastle to Bergen and thence by ordinary mail steamer to the North Cape and Vadso, where every day brings fresh fiords and the structure of the storm beaten coast of the Lufoten islands will reward the patience of the traveller.

Others again will find the English Lake District attractive, or voyage on the western shores of Scotland, where they can see Fingal's cave and study basaltic formation, and visit Iona and muse on the memories of British Christianity. Some will, I hope, find their way to the intensely interesting Giant's Causeway in the north, the picturesque mountains and lakes of Wicklow in the centre, and the beautiful southern coast of Ireland, where there is so much to see that we neglect, while parts of the Continent of Europe are absolutely too familiar to British travellers.¹

Wherever we go the camera will record for us the places

¹ There is much improvement in the accommodation for travellers now to be had in Ireland. There is also much enterprise on the lines of railway.

we have seen, and we can easily make lantern slides that will give us and those we teach happy records of our holidays.

It is always a pleasure to a class to share in the personal experiences of the teacher, who in his turn may be pardoned if he feels a little pride when he can say: "When I was there the glacier was only moving at the rate of four inches daily." I should also encourage any boy or girl to bring me in their turn views of what they may have seen. A school would soon possess an illustrated volume of its own making, to which others would be proud to add from time to time.

If then by study and making maps and by travel the teacher advances in his own knowledge of our third chapter, namely Physical Geography, he will add to his efficiency by grouping together some leading features of the condition of the Earth. For instance in the fascinating *Physiography* of Huxley he will find the description of the work done by water.

The Procession of water. He teaches us that the ocean by evaporation throws up the moisture that may in clouds and then in rain come over the land on which it falls, thus to contribute to a river that will bear that water back to the sea again. He quotes from Ecclesiastes: "All the rivers run into the sea: yet the sea is not full: unto the place from whence the rivers come thither they return again." A great truth like that may be obvious, but it is inspiring.

Denudation and elevation of Land. Then again he makes clear the constant process of denudation of the land by the sea, rain and rivers, and shows that also volcanic activity adds to the area of land, so that it is probable that the greater part of the South American coast has been raised several hundred feet by the succession of upheavals. Even then all this fresh material is again to be subjected to the ever-active agents of denudation. Here again is a process that is part of the eternal order of things.

Some valuable Comparisons. Large views again will help us if we reflect, that while much is made of the land and its elevations, yet the sea occupies a far larger area and its average depth is far greater than the average height of the land, so that there is much more sea than dry land.

This comprehensive method will make us look, not at Europe and Asia, but at Eurasia, for there is no natural demarcation

It will lead us to connect in our mind the position of the British Isles to the west of this mass of land and that of Japan to the east : the population of each group, free by position, but daring to take its share in the affairs of the continent. We see how intimately Eurasia is connected with Africa, having a midland sea round whose waters history has been in the making for centuries and that the old world from Behring's Strait to the Cape of Good Hope slopes, as it were, away from the great twin brethren of North and South America, with myriad islands in the space between, one of which almost ranks as a continent.

We compare for ourselves the condition of Africa, its upper half largely desert with a great lake system in the south and east connected with the Nile, with America either in the northern portion with such another lake system and such another river in the St. Lawrence, or the southern portion with giant rivers and an absence of lakes.

Botany. In thus taking large views we shall come to appreciate the fact that all this structural comparison between water and land, and between one continent and another, brings us naturally to the study of that which grows on and diversifies the face of each country, namely plant life, and all that moves or has its being amongst these surroundings, namely animal life. There must be many who find in Botany a fascinating pursuit. All such study of nature will bring light to the classes in Geography.

In dealing with plant life for our purpose we must mainly confine ourselves to its effects on climate, to its utility as a means of shelter or a source of food or material for clothing for man. It will not do to trespass in its own proper field. Happy the teacher that has made that field his own, and happy the school that has time given for its study, but for us there are limits.¹ Charles Darwin considered Professor Henslow the most informing teacher he had met. We might suggest his *Botany for Beginners*, *Origin of Plant Structures* and *Origin of Flower Structures*.

Zoology. The same self-denial must be applied to Zoology. It is enough for us to mark all those species that

¹ Cf. "Geographical distribution of Land Plants." *Geographical Teacher*, Autumn No. 1905, p. 120, etc.

contribute to man's wants in the way of food and clothing or by aiding him in transport, or affording articles of commerce, or least of all—and less and less as weapons grow more destructive and hunters too numerous—in the way of sport. It is not necessary to relegate the animal life of a region to a brief list at the end of a section. Familiarity with the general type of animals peculiar to any region is not impossible.¹

Here books of travel and exploration may be used largely. The work done by the camel in Asia, Africa and Australia : the variety of service performed by oxen of many types, as well as the more obvious assistance of the horse and mule, are leading instances of general arrangements of thoughts and facts. The contributions of the sea to the sustaining of life, the fisheries of oceans, different seas and coasts again compress our array of facts into available compartments. The share of flesh-producing animals in supplying food will make another such compartment : and for realizing still further the conditions of existence, we must be able to give some account of bird life to our class. The condor of the Andes, the eagle, the vulture, the flocks of gulls on the sea shore, the singing birds, the sacred birds of Egypt or India, the fishing birds of China, all will bring reality and charm. Once more alas ! we have a thousand things to tell and only scanty time in which to tell them.

Race. The immense subject of *Man* now confronts us,

and his relations to the earth. Keeping steadily before us the wide expanse over which he is settled we may first consider the question of Race.² There seems something natural in beginning with the thought of the Indo-European family and marking its extent of settlement. Imperceptibly it merges into the Mongolian on the east. It is again connected by the Arab with the Negroid varieties of Africa. By colonization it has come into contact with the natives of Africa, of Australia, of North and South America. It is found as far north as Alaska,

¹ I am glad to find this idea of mine fully endorsed by Professor Thomson in his article on "Geographical Distribution of Animals," p. 115, etc., in the *Geographical Teacher*. Autumn No. 1905.

² *Man and His Work*, Herbertson, Chap. xiv. The whole book is of value.

as far south as Cape Town. Only the impenetrable icy barriers of Arctic and Antarctic oceans have barred its approach to the ends of the world. The natural accompaniment of this expansion has been the creation of countless divisions of the Earth's surface as artificial collections of human beings known as Kingdoms and States. No more useful maps are published

than those which show the changes and growth States. of these states century by century.¹ We advance from the knowledge of the Phoenician sailor to the explorer of to-day by stages, until the light gradually spreads over the darkness.

We realize the manner in which man has arrived at his present settlements in this way. Not only the natives but the new comers form the many states we now have, the new comers largely the most efficient. From the catalogue of the divisions or states we naturally come to the way in which men communicate one with another.

Commerce. Here we arrive at the vast subject of commerce, which taken simply means the exchange of all products between different places. It has a fascination of its own. Communication on land by the caravan of brick-tea in Asia or by the tunnels under the Alps is as interesting to the young as the thought that the sea not only divides but connects different countries. The tracks of ocean-going steamers and their mileage help, diagrams of exports and imports help.² We are not so surprised to find our own interest aroused, but we are to find a great desire to pursue this subject further, especially with more advanced classes of boys.³

These three very general divisions of the study of man by Race, by State, and by Commerce cover the main conditions of his existence.

¹ The most informing series of Maps in Keith-Johnston's Geography must be studied. They bring out very well the truth in point.

² Chisholm's *Commercial Geography*, p. 25. Specially with reference to the diagram of the production of coal in the United States, Great Britain and Germany.

³ Consult always *The Statesman's Year Book*, and Whittaker's *Almanack*. Valuable also is Sell's *Commercial Intelligence*, published every Wednesday, price 3d.

If this is mere outline it has the merit of simplicity.

Pictures of Races. I make such wide views prominent, just as one would climb a hill to take in an impression of the surrounding country.¹ It is clear that in searching for information about Race we can lay under contribution *all illustrations* in order that we may realize the different types. The more savage tribes will retain marked traits in physiognomy as less disturbed by blending. The more civilized peoples will acquire a more compound expression and have many similar faces in various countries. Thus one can find great likenesses amongst men of different nations widely separated by settlement, and mistake men of one country for men of another, but never hesitate to identify a Samoyede or a Patagonian.

Just to amplify further our general three-fold division *States.* which is given above, in studying the artificial divisions of men into States we may lay stress on the influence of physical features, such as the mountains which divide and protect, or the rivers which unite and support, in our lessons in Physical Geography. In this later stage we are mainly in the hands of History. It would be impossible to explain the divisions of North America without it. Still more would Europe be unintelligible. If battle fields alone are marked with dates one can lead towards a knowledge of the History. Picture for yourself a moment how much might be learned of England in such a way. I am sure that a map which gives us Hastings, Lewes, Evesham, Towton, Bosworth, Marston Moor, Naseby, Sedgemoor, to take but a few instances, rivets our attention. I think from what I have heard our colonial brethren have made these maps clearer in their classes than we ourselves have.² History holds the secrets of state

¹ "He spoke like a man inspired ; seeming as if from some mountain summit high in air, he saw beneath him the far winding path of human progress from dim Cimmerian shores of prehistoric shadow into the fuller yet broken and fitful light of the modern time."—Professor Bryce on Lord Acton, quoted in the Preface by Herbert Paul to *Lord Acton's Letters to Mary Gladstone*.

² This was made clear by Dr. Parkin in his speech at the annual meeting of the Geographical Association, 1905. Naturally perhaps the Canadian child studies carefully the map of the country from which his fathers came.

existence. There is in the new *Student's Atlas of English History* by Emil Reich such a treasure of information that few should be without it,¹ and the *Historical Atlas of Modern Europe* edited by Mr. Lane Poole is of equal importance.² A most excellent Historical Atlas by Mr. Grant Robertson has also just come out.

In the teaching of commerce it will be interesting to bear in mind the manner in which one nation after another has taken up the burden of the carrying trade. The voyages of the Phoenicians are familiar to us from the story of the tin-mines in Cornwall. Their colony of Carthage carried on the work.³ The mere mention of Venice brings to our minds the Merchant of that town and Shakespeare :

Your mind is tossing on the ocean ;
There where your argosies with portly sail,
Like signiors and rich burghers on the flood.

Then came the partial eclipse of the Mediterranean trade, by the blocking of trade by the Turks, by the discovery of the Cape route to India and by the coming in of the New World to upset the commerce of the old.

Spain, Holland and Portugal rivalled, if they did not surpass, England. Then by degrees as the world expanded so did the British and other European commerce, until in almost our own day the Suez Canal revived the prosperity of the Mediterranean coast towns.

A picturesque touch would be easily given by a sketch of the ancient caravels or the vessels of Columbus, to go no farther back, in contrast with ocean liners of to-day.

A brilliant outline of the progress of Commerce on an ampler scale than that above is given by Redway in his very informing *New Basis of Geography*.⁴

¹ A new *Student's Atlas of English History*, by Emil Reich. Macmillan, 1903.

² *Historical Atlas of Modern Europe*. Clarendon Press. Oxford and London.

³ Cf. also *Elementary Commercial Geography*. H. R. Mill. Pitt Press Series.

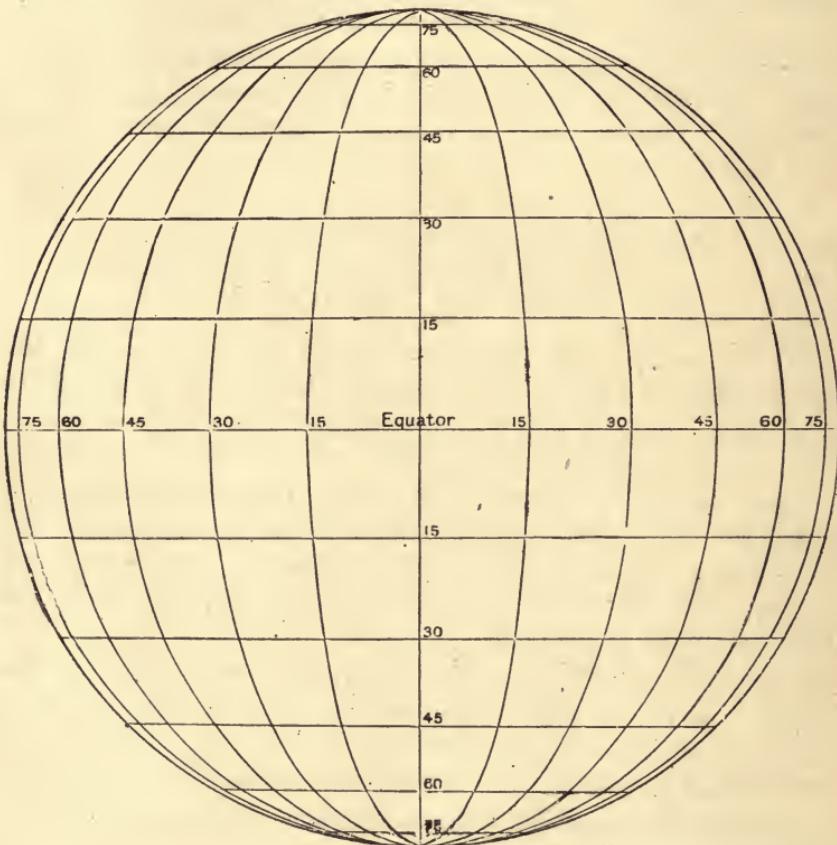
⁴ See Herbertson, *Man and His Work*, p. 95.

Notes on Chapter I

MATHEMATICAL GEOGRAPHY.

There are in all text-books fairly clear explanations of the facts which are necessary for the understanding of maps, but on the threshold of the subject "a description of the Earth, which commences by telling the child that it is an oblate spheroid, moving round the sun in

ORTHOGRAPHIC PROJECTION.

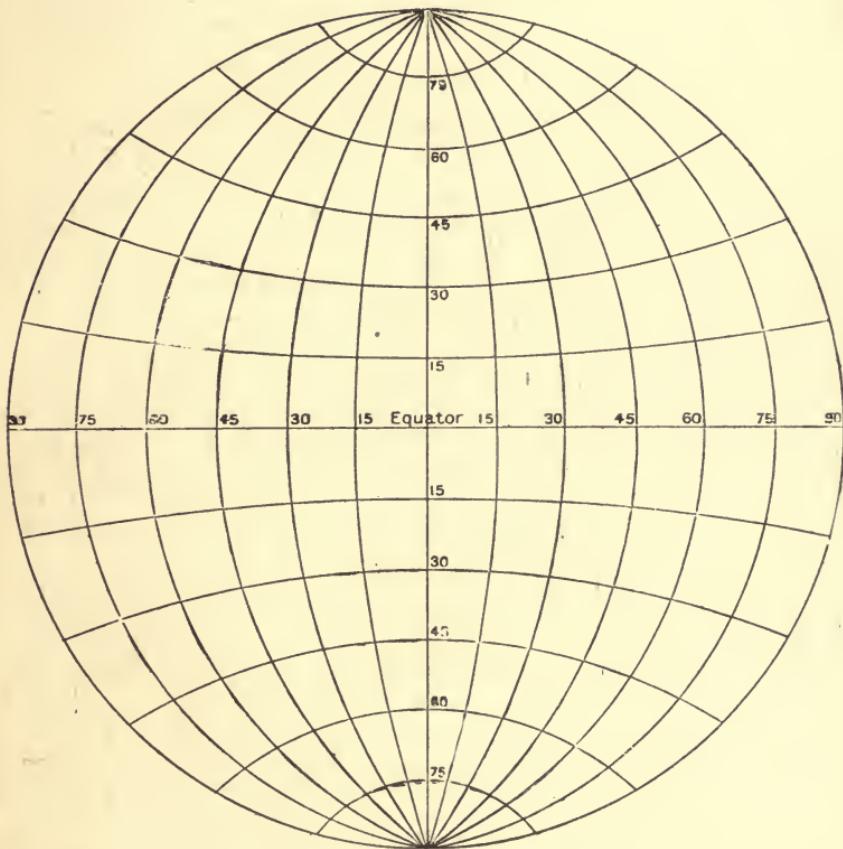


an elliptical orbit is hardly calculated to interest or instruct."¹ We have learnt to place the Earth in its relation to the Sun from our work in Astronomy, and the movements of rotation and revolution once explained the practical facts of map delineation come in view. The figure of the Earth having been proved a sphere from the phenomena of ships disappearing by degrees as they sail from the observer, or the

¹ See Huxley's *Physiography*, original preface.

shadow thrown by the Earth during an eclipse, we come to deal with the efforts to depict the surface by artificial means and on a plane surface. By taking an imaginary line round the Earth and calling it the Equator, Geographers begin by measuring from to it North and South by means of circles, ever growing less as they recede from the central great circle, and call these parallels of Latitude. These would not alone determine the position of a place, so again the Geographers have

GLOBULAR PROJECTION.

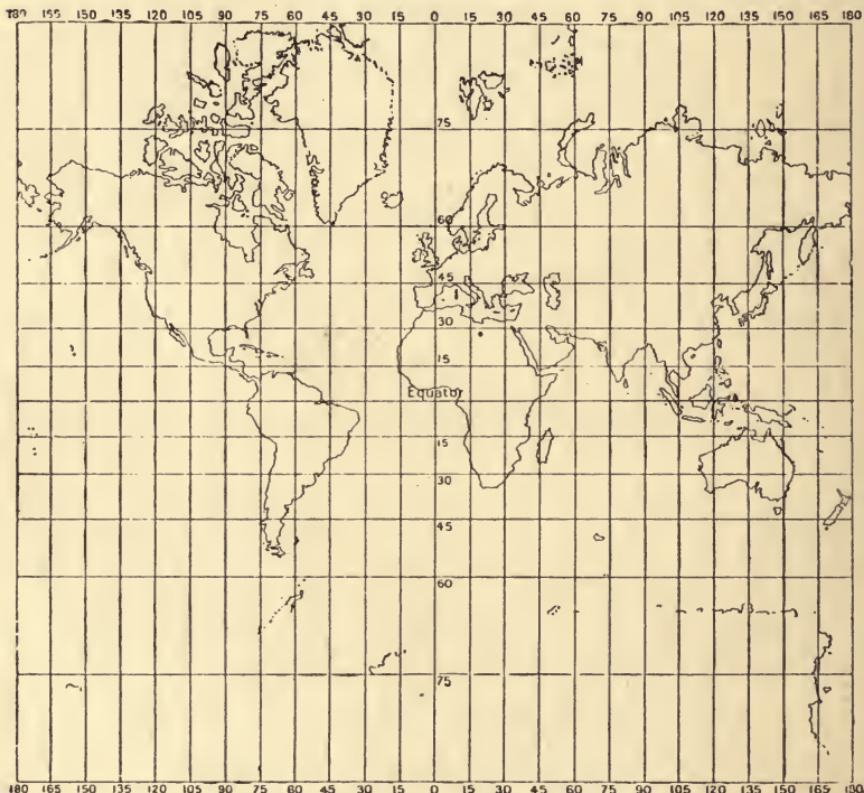


drawn a number of great circles through the North and South Poles each having the Earth's centre as its centre, and call these lines of Longitude. Any place found at the intersection of these lines of Latitude and Longitude is said to be so many degrees north or south Latitude measuring from the Equator, as London $51^{\circ} 30'$ N. Lat. or Sydney 34° South Lat. and so many degrees of Longitude east or west of a given line (in our case at Greenwich, near London) as London $5'$

10 W. Long. and Sydney 151° E. Long. The total number of degrees of Latitude from Equator to Pole is 90, that is one fourth of 360, the number of degrees given to a complete circle round the Earth. The total number of degrees of Longitude is 360, divided into 180 East and 180 West of the given line called the zero meridian. The degrees are marked °, they are divided into minutes marked ', and minutes into seconds marked ".

To lay down on a globe such lines of Latitude and Longitude is easy.

MERCATOR PROJECTION.



When we come to show them on a map we have to represent that which is round on a plane surface. This is done by means of projection. This is explained in Elderton's *Maps and Map Drawing*. The diagrams of orthographic and globular projection in Huxley's *Physiography* are also useful. Practically each projection involves a certain amount of distortion.

The well known projection of Mercator is an instance in point. The exaggeration of Greenland due to the increase of distance between the parallels cannot escape notice.

A short summary of the principles on which Mathematical Geography can be taught is to be found in Geikie's *Teaching of Geography*.

NOTE.—The fundamental but difficult problems of astronomical Geography, such as the change of seasons, determination of latitude and longitude, rotational deflection, and the courses of tides, are illustrated by sun and star observations and the use of every available experiment and device. This is a part of Geography which requires the greatest care and skill on the part of the teacher, and in which complete success is seldom attainable. Professor C. R. Dryer of the Indiana State Normal School, Terre Haute, at the annual meeting Geographical Association, 1904.

EQUIPMENT.

It will follow from the foregoing pages that while a great deal depends on the teacher, he requires a certain amount of tools with which to work.

He must have a number of *wall maps*. It seems invidious to name any particular publisher, and schools are of so many types and such different purchasing powers that I can only suggest that of these at least some should be without names and used for questioning. Most important are geological maps and what we may call economic maps. The clearer these maps are the better for every one.

The Terrestrial Globe is an essential for helping in the Mathematical Geography and for the true understanding of the relative sizes of different countries. The larger the globe the better ; it is not necessary for it to be crowded with names, these can be found in the maps in Atlases. A globe marked with the depths of the sea, and also with the great sea-routes followed by ships is of value.

The Ordnance Survey Maps can be obtained now from the Director-General Ordnance Survey, Southampton, on most reasonable terms, provided that a guarantee is given that the maps will be used for teaching purposes and will not be sold. The use of these maps for studying the neighbourhood of a school is very great.

The use of *Relief Maps* such as those extensively used in Switzerland may lead to error from inevitable exaggeration, but they are certainly attractive and much appreciated by

classes. The more zealous teachers in France, both in primary and secondary schools, have made models for themselves in plaster and other materials, and such models can well be made by both teachers and taught, layers of cardboard can be cut to make contours, and there is no limit to work in this direction but that imposed by the initiative or the reverse of the teacher. There are some who are gifted in this direction and others who with the best will are unable to do much. It is often possible to find pupils who will turn out excellent models. The wise teacher never does ill what the pupil can do well.

The collection of typical *Products* of a country is well worth a little trouble, the exhibition of cotton, silk, fibre, fruits, even a collection of things tinned in different countries is life-like. The shells of tropical countries, and coral, are most popular, the minerals and any rock specimens are equally so, the curiosities of India, China, and Japan are endless. Boys delight in weapons, e.g. Malay cris, the Boomerang, Japanese swords, Assegais.

CHAPTER II

THE TEACHER IN SCHOOL—AND OUT OF IT

WE have now got an idea of the order in which to take the subjects connected with Geography ; let us come to the results of such preparation. The subject is so wide, the information so varied and the temptation to follow up each course so great that it becomes almost bewildering. The ideal would be to attend a school for instruction, but as most teachers cannot be spared for this purpose, practically they have to learn for themselves and to make the best of their spare time.¹

There can be, however, a training for the immediate future, and that will largely be a process of rejection and selection. In the first place the teacher should grasp the idea that he is to master whatever section of the subject he is set to teach so thoroughly that he can dispense with any text-book in school for the class. In preparing for his class he can use as many books as he can find to help him, but when he has digested them he is the book for the class to read. If there are passages of special importance in any book they can be read out, or copies made of them and given round, or the book read by the class out of school. It is true that each teacher will impress each class in a different way. The class will reproduce the teacher's line of thought, even his very expressions. Any one who has examined knows the catchy phrase from text-books that appears in almost every paper. The teacher who is in earnest is as good as any text-book, notwithstanding his pet phrases.

Drawing on the Blackboard. In the second place the teacher should practise any and every kind of diagram for the blackboard. There is no necessity to be an accomplished artist,

¹ No one should be without Sir Archibald Geikie's *Teaching of Geography* (Macmillan's Geographical Series) and Professor Morgan's *Practical Teaching of Geography* (6d.) (Geo. Philip & Son Limited) and Dr. H. R. Mill's *Hints to Teachers*. Longmans. 1897. 3s. 6d.

the point is to be able to draw, for example, a rough sketch of the first thirteen colonies of the United States or of the Colonies of South Africa. Choose a meridian to work from, draw as many other meridians and parallels as you think necessary, and then the coast line, put in names rather than figures, e.g. New Jersey rather than 7, be clear with your rivers, certainly with the main streams, and indicate your mountains by broad lines, use coloured chalks if you like ; you must try to produce an effective sketch without too much detail. The old-fashioned diagram of mountains arranged in order of height has much to commend it, but be careful to explain that they do not exist side by side in that order. I have explained this by saying that mountains are like cards dealt out to players, and that in diagrams they are arranged in order according to their value by the players in their hands. Another diagram can be drawn showing the relative position of these mountains to each other and an effective photograph shown of a mountain chain such as a section of the Himalaya. Some of the most interesting diagrams are those which show the course of a river and the part it plays as a boundary ; towns are placed on its banks and I explain how one has sprung up at a junction of two streams as it now does from the junction of two lines of railway, while another is naturally at the mouth of the river as the great town marks the terminus to which the line is brought, but the river has caused the towns and the towns the railway. A further point may be well made of the course of the railway, which follows the stream generally, as the Great Western following the Thames to London from Oxford, or the lines that run near the Hudson. I think something might be said here of the twists and curves of the river in making its way and the comparative straightness of the railway ; a touch of poetry would contrast the silence of the stream with the roar and rattle of the train : perhaps another contrast might be allowed of the everlasting force of the water that night and day has poured along the way to the sea free for all men to use, while trains run only now and then and men pay to go on them. The diagram will not suffer from a few touches of that sort, indeed it will become a reality. There may be errors in diagrams drawn on the board, that cannot be helped, what you have to do is to give a general impression ; you may tell a class that the Rhine

the Rhone and the Danube rise near each other and then follow widely different routes, but they will *remember* it if you draw a sketch and illustrate the course of the one to Holland, the other to the Mediterranean and the third to the Black Sea. You may be most clear about the position of the Great Lakes in North America, but they will not make them their own until they have seen Superior, Erie, Ontario and Huron for themselves on the board. Another most effective sketch will illustrate the division of Ireland by the Shannon, another the division of Scotland by the Caledonian Canal.

Globe. The use of the blackboard is a very effective method of training the teacher. I think next in usefulness is the globe. There can be little realization of the immense sea-area as compared to the land without it. When such lessons are given as the one that follows on India, the globe will soon show the route by which the traveller must proceed. The knotty points of Latitude and Longitude the globe is ready to disentangle. Here certainly is one of the hardest things to teach. The Equator on the globe makes it plain that we must start there, and our explanation of Latitude and Longitude can be worked out by beginning with Greenwich and its exact antipodes, letting the class count the degrees to East or West. There are few more puzzling things to the young geographer than all the artificial means of measuring the earth's surface.¹ The Tropics lead him to believe that the temperature is measured out exactly, so many degrees of heat and cold. Then he is told about Isothermal lines, so if these can be shown on the globe he is greatly helped. To follow a parallel of Latitude round the world and mark the principal places is also a good plan as it brings together the various countries. The same plan with meridians may also be adopted. It is always well to allow the children to find for themselves the places that lie within a certain figure, such as is formed by the parallels of 50° and 40° N. Lat. and 10° W. Long. and 30° E. As soon as you find them searching the globe for their own amusement and

¹ "What's the good of Mercators and Poles and Equators,
Tropics, Zones and Meridian Lines?"

The crew would exclaim and the Captain reply,
"They are merely conventional signs."

—*Hunting of the Snark.*

comparing it with their maps you may be sure that your teaching is leading to thought. There is no need to despise globes as old-fashioned. They record the oldest fashion of all, the shape of the earth. The modern may well copy the best ways of the ancient teachers. The globe is an absolute essential.¹

There can be no more fascinating aid than the use of slides, which can be obtained by members of the Geographical Association from the Diagram Company, West Barnes Lane, New Malden, Surrey. The relief to the teacher is great if the classes can have lantern lectures about four times a term. The teaching should, I think, precede the exhibition of slides, so that the pupils should have a stock of facts and recognize them for themselves on the screen. Pictures of scenery and people add to the realization of the work. What helps most is a slide that shows the relative position of mountains and lakes in the English Lake District or the Divisions of Australia. Perhaps the most popular is one that gives part of the surrounding country, and it may well lead to an excursion to the given district, where the class may practise the lessons they have learnt by making a rough map. For this see Dr. Morgan's *Practical Teaching*, pages 7, 8, and 9.² He gives most excellent directions, beginning with the method of finding the geographical and magnetic meridians. This and his subsequent suggestions are an unfailing source of interest even to young pupils. These outdoor walks with a teachable number can be made most valuable. The youngest will enjoy them and the teacher will find help in the Chart referred to in the note.³

¹ See Geikie, *Teaching of Geography*, p. 157.

² Morgan's *Practical Teaching of Geography in Schools and Colleges* (Price 6d.).

³ Philip's *Geographical Chart for Elementary Classes* (George Philip).

CHAPTER III

INDIA

LESSON I.

I DO not know of any better way of helping a teacher than by giving as an illustration the following lessons on a plan which I have found produces good results. I take a class in India.

The first thing is to bring them to the globe and show how Europe and Asia lie side by side, and from one mass of land which may best be realized by calling it Eurasia I show how political divisions and the structure of the land make the approach to India almost impossible. A journey by land from Great Britain is out of the question at present. I mention the possibility of a route by the Euphrates, then turning to the globe I ask if the sea is not a better highway ? I point out the relative position of Africa to the Continent of Eurasia and make it clear that in order to reach India we must go by the Mediterranean or round the Cape ; the longer journey is the safer because our ships can be protected by our Navy : the quicker route is made possible by the Suez Canal, and the posts which Great Britain has established at Gibraltar, the gate to the Mediterranean, and at Malta so strongly fortified, and by her occupation of Egypt ; further on still Aden guards the outlet of the Red Sea. To keep this route better in memory I show an advertisement of the P. and O. What does this mean ? Has any one heard of the Peninsular War ? Yes ? Then peninsula means Spain and Portugal ? Yes, and Oriental means rising, for so the Latins spoke of the East, and of all the regions beyond the shores of their Mare Magnum. So the P. and O. takes passengers round the Peninsula and to the East : I explain that the mails can be taken and are taken in times of peace across the Continent of Europe to Brindisi,

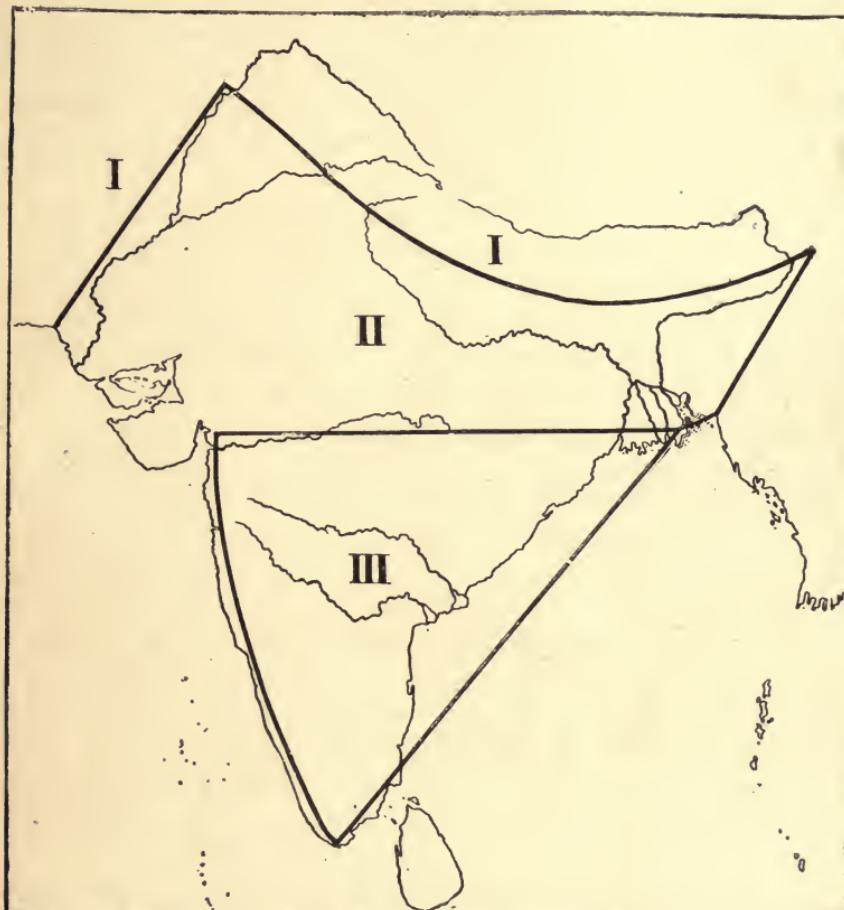
and bringing out an envelope from my pocket I let them all examine it to see the postmarks are Bombay the 9th and London 25th. A letter comes in sixteen days. How different this speed, I say, from the days when the exile in Calcutta rejoiced over a letter written three or six months before, and yet this is not all, for by cable news can come "before it is sent," for the time in India is six hours ahead of that in England. I draw two clock faces on the board and put the time on one at which I am giving the lesson and on the other the time at Calcutta. If it is about noon in England I tell the class that in Calcutta the Europeans are going out after the heat of the day to drive or ride before their dinner. I ask if any one can tell me what is happening in New York, and if no one replies I picture the busy crowds crushing their way to offices in the morning hours of that feverish city of business. I hope the contrast will be sufficiently striking for the class to realize the simple facts of time and the passage of the Earth past the Sun.¹

I have now established a certain position for the class. I have given enough facts for the mind to picture a voyage to India. I find it always well to conclude a lesson as brightly as possible ; the picturesque need not be unpractical, the only danger is that it has a trick of remaining in youthful memories and annoying examiners. Just to make it more realistic I describe how we might leave England covered with snow and battle our way through the Bay of Biscay in storm ; on we go until in the Red Sea we can hardly breathe and the shivering Lascars of the London docks are themselves again on that sultry sea : the white clothes of the officers and passengers look very different to the great coats and mufflers in which they started.

¹ This may have been taught in early stages ; it does no harm to remind the class of the facts.

LESSON II.

The voyage to India has taken up one lesson, and after some questions have been asked on the facts mentioned in it I take the class to the largest map I can find and begin a lesson on



structure, drawing on the black-board a triangle with a base from Kurachee to Bhootan, I point out at once the grand ranges that follow the lines from K. to P., P. representing the Pamirs or the roof of the world. I show that these mountains constitute the defences of our North Western Frontier, and I mark especially the Khaibar Pass as the danger pass. I make them observe the tremendously broken character of

the border countries of Afghanistan, Chitral, etc., and ask how can armies either be brought across from Russian Central Asia to invade India or conveyed through the Khaibar by the British to defend such a place as Herat. I make them understand the advance of Russia into Central Asia and compare it to the tide which comes over the sands and wipes out the castles of the child builders. Bokhara and Khiva—cities of sunburnt bricks—fared no better at the hands of the Russians than the sand castles on any coast when the tide comes in. I tell them of the rails that are waiting in vast numbers at the head of the Russian advance track ready to go down and to be fastened together to make way for the army of invasion. "All this," I say, "may be put off until Russia recovers from the war with Japan and Revolution at home, but do not forget that on that side of India and with the rugged ranges between them lie the Russian Bear and the British Lion." I conclude this description of the North West by a short account of the other way of approaching Russia through Beloochistan and mark Quetta. Then I make the point that on the north east side of the Indian Empire stand the giants that are called the Himalaya ; some of these are nearly 30,000 feet high. I have noticed that if that height is simply stated it produces little impression, but if I say it is 10,000 yards and that again is nearly six miles (about $5\frac{2}{3}$) the idea becomes magnificent. I warn them however that these giants do not look so high as other mountains, such as Mont Blanc (only 15,000 feet high), because the traveller looks at them from ground already high above the sea. If I can I impress upon them the vastness of this barrier and the way in which it has cut off such a country as Thibet from India. Men speak of the North Western Frontier, for they are thinking of that which is beyond. Invader after invader has come from the west. They hardly use the phrase North Eastern Frontier. The difficult passes, the dangerous roads, quite as much as the jealous exclusion of the European and his allies by the priestly rulers have kept Thibet unknown and Lhassa the forbidden city.

But I say this great series of mountains has sent from its heights great rivers to water India and further India. The Indus starts not far from the Sutlej and Brahmapootra and each is the messenger of life for thousands of miles to thousands

of people. Just as the Rhine, the Rhone and the Danube rise not far from each other so these greater rivers derive from the same heights and from the same causes of melting ice and snow. I show that the slopes of this mighty series of mountains incline to the west.¹ We mark the position of Kashmere, of Nepaul, of Sikkim, of Bhootan, and I have now established another set of ideas in the minds of the class. I have made them realize the structure of the frontiers. It would be well to give, as an exercise for the class at the end of the lesson, maps of the great mountain ranges on the north east and north west of India.

LESSON III.

The well defined tracts of the great mountains of India's frontiers are now in the mind's eye of the class and I proceed to the second tract of the river plains. Here I point out that the Sutlej and the Indus break through the great barrier and form the leading feature of Northern India. Observe the course of the Indus starting from Tibet, flowing 800 miles north and then turning south west to flow for 1,000 miles through Punjab and Sind. Note that its very name has come to be that of the whole vast peninsula because invaders came first to it and fixed upon that name. Show where the Sutlej joins the Indus and make clear that both bring the silt to make the country fertile. Point out that at Attock the Cabool brings its share from the north west and tell if you like of the inflated skins on which travellers voyage, give the derivation of Punjab, and do not forget Alexander the Great. Next tell them that also from a glacier in the Himalaya comes the Ganges, that mighty river, the holy river the people call Mother Ganges.

It draws its waters from the slopes of the mountains facing the west, while behind the great barrier is flowing the Tsanpu, afterwards the Brahmapootra, until it curves round the south eastern end and joins with the Ganges in the vast delta common to both. Tell the class that by means of these three

¹ This vast double barrier arrests the monsoons and pouring down their moisture adds to the volume derived from ice and snow.

distinct river systems over 150,000,000 of people are fed and watered in Punjab, Sind, Rajputana, Oudh, The North West Provinces, Bengal and Assam. Make clear that all owe their origin to the double barrier of mountain heights, and from comparatively a close beginning end, in the case of the Indus in the waters of the Arabian Sea and in that of the Ganges and Brahmapootra, meet once more in the Bay of Bengal. Of each it is true that they first create the land, then fertilize it, then distribute its produce.

I should point out that the Indus has few cities of note connected with it, the Brahmapootra none, but the Ganges is "a necklace on which jewels glisten." On its tributary, the Jumna, stands Delhi, on its own banks where the Jumna joins it Allahabad, further on the sacred city of Benares, and further again Patna, while Calcutta is connected with its vast delta.

I now say that I have established the idea of connexion between these mighty streams and point out in succession their tributaries. Coming back to the Punjab I ask the class to find the Jhelum, Chenab, Ravee, Sutlej, and to bear in mind that they all approach the Indus on the eastern side, as if a tree had only branches on one side, and that it is so because on the western side the mountains between the Indus and Afghanistan forbid the formation of large rivers. No study of these waterways would be complete without mention of the canals of the Jumna and of the Ganges. The tributaries of the latter, the Gogra, Gumti, Son, Gandak and Kusi support and maintain the main stream, the fertiliser and highway of Bengal. The extent of its delta, beginning 326 miles from the sea, can be partly realized by measuring that distance on a map of England. At this stage we must aim at general impressions, emphasizing our main points, and not forgetting the Great Indian Desert.

LESSON IV.

After a rapid recapitulation of our knowledge, aided by criticisms on maps which the class has drawn of the course of the rivers mentioned in our last lesson, we proceed to deal with the great

triangle left. It may be pointed out that the Vindya hills make its northern side, while the western and eastern Ghauts comprise the others. Take on the west Mount Abu in Rajpootana plains and move across the map until we reach Mount Parasmuth. The western Ghauts average 3,000 feet until they rise to 7,000 or 8,000 feet at their southern upheaval. From them naturally flow the Guadaveri, Kistna and Cauvery right across until they also form deltas and join the Indian Ocean. No great river pierces the Western Ghauts from Surat in $21^{\circ} 28'$ to Cape Comorin in Lat. $8^{\circ} 4'$. Contrast with these three rivers the opposite course of the Nerbudda and Tapti more to north. These flow to the west into the Bay of Cambay. To the whole triangle may be given the name of the Deccan—originally used for the tract between the Nerbudda and Kistna—and here are such native states as Hyderabad, ruled by the Nizam, Mysore as well as the Central Provinces and the two seats of government at Bombay and Madras. Of the mountains besides the Vindhya which run from Gujerat across Malwa to the Gangetic valley, thus forming an ethnical and political barrier between that valley and the Deccan, there are the Satpura Mountains which separate the Nerbudda from the Tapti, and the Nilgiri with Mount Dodabetta (8,760 ft.). The whole triangle slopes from west to east, presenting a likeness to the structure of Southern America. Point out the contrast between these southern rivers and those which derive their waters as well from ice and snow as rainfall. Here the supply is due to the monsoons only. Show that this third section lies south of the Tropic of Cancer and has two coasts known as Malabar and Coromandel which offer few harbours though their extent is great—over 2,000 miles.

LESSON V.

We can now claim to have established with clearness three chief thoughts, the mountain barriers on north east and north west, the great river plains and the Deccan triangle. There will now be opportunity to amplify each in turn. This lesson we may devote to :

- I. The names of Mount Everest, 29,000
Kinchinjunga, 28,200
Dwalagiri, 26,800
Godwin-Austin, 28,250 ; Kara Korum
Mountains.
- II. The Sulaiman Mountains, famous for passes :
The Khaibar leading from Peshawar to Jellalabad.
The Gumal leading to Ghazni and Kandahar.
The Bolan leading to Quetta and Baluchistan.
- III. The connexion between our frontier mountains and the star shaped cluster radiating from the Pamirs.
- IV. The successive ridges by which the Himalaya rise from the plain and the hill states settled on them, and the hill stations where Europeans retire for health.
- V. The exact positions of the sources of all rivers which derive from the Himalayan slopes.
- VI. A comparison of these Northern Giants with the more broken Southern Highlands and with such ranges as the Rockies or the Andes.

LESSON VI.

Here again we can fill in our outlines. We know of the great rivers of the plain from Lesson III.

- I. Let us connect with the Indus the Punjab, the Sikhs, Sind and the modern and rising port of Kurachi with rail to Punjab.
- II. Show how the great desert fills up the space between the Indus system and the Gangetic. Study Bikaner, Rajpootana.
- III. Use the Ganges as a chain to connect the North West Provinces, Oudh and Bengal with the Punjab and point out the towns in the plain, noting their beauties of architecture and native manufactures.
- IV. Mark the railways and the products of the Ganges Valley.
- V. Contrast the mighty twins Brahmapootra and Ganges with each other, the one flowing unknown through

hostile Tibet, the other through teeming millions. Contrast them with such a pair as the St. Lawrence and Mississippi ; or the Nile and Congo.

VI. Note the fertility of the soil, the network of canals.¹
 VII. The seats of government at Calcutta and Simla.

LESSON VII.

(2nd on DECCAN.)

- I. Show how this plateau of the Deccan is varied in character and broken up in contrast to the great plain.
- II. Enumerate the states, study the independent ones, e.g. Mysore.
- III. Point out the fertility of the soil, the important coal-fields.
- IV. Note the foreign possessions of the French and Portuguese.
- V. Connect Bombay with this division, give its history ; it is now the chief port and manufacturing city in India.
- VI. Observe the railways, note the skill by which the line from Bombay to Madras is carried by the Bhor Gat.

¹ "India for many centuries has been supplementing its atmospheric water supply in its own primitive fashion. The rain water was stored in tanks, or it was tracked to its subterranean reservoirs, and drawn up to the surface. The ancient rulers of the land were great diggers of wells and builders of cisterns : it was left to the English to amplify and develop the enterprise. For the last three-quarters of a century the engineers of the Indian Government and the Public Works Department have been engaged upon it. The result is a system of irrigation which, though still incomplete, is unquestionably the most magnificent created by human effort in any modern country. The great rivers have been tapped in their upper ranges, and the surplus water that comes down in the rainy weather is drawn off into main feeder canals, which deliver their contents into branch canals, and there again fill a network of minor runlets, and finally discharge their fertilizing streams into the channels and ditches by which the farmers keep their crops green." (The *Standard*, February 13, 1906.)

LESSON VIII.

The main features of our continent are now completed ; it remains to take the class to Burmah, pointing out the strange shape of Tenasserim and the great importance of the Irrawaddi rising in the plateau of Tibet. Mandalay you can illustrate from Kipling's verse. Rangoon and rice is alliterative. The Islands, headed by Ceylon, next deserve attention. The chief seaport Colombo, Trincomalee harbour, the ancient remains at Anarajahpura, the pearl fisheries, the great tea plantations which have brought prosperity in place of the ruin that followed on failure of the coffee, the strange beauty of the island, and the rocks and islands that stretch across Palk Strait and form Adams Bridge are the leading points to emphasize. Note the position of the Andaman Islands used as convict settlement, and the scattered character of the Laccadive and Maldivian islands, coral groups allied to those of the Pacific Ocean.

Be careful to mention the difference in appearance between Burmese, Sinhalese, and peoples on the Continent.

LESSONS IX and X.

It will now be time to say something of the waves of conquest that have flowed over India, mostly from the north west, bringing many races that have settled down and driven the original inhabitants into the hills, where such tribes as the Ghonds and Bhils survive. Language and religions there are many and four-fifths of the people profess Hinduism. Buddhism is not strong save in Ceylon, but Mahometanism claims many followers. The coming of English traders dates from the time of Queen Elizabeth, and the story of the East India Company can be briefly told, with the names of Clive and Plassey, Warren Hastings and the two Wellesleys as salient features. The mutiny of the Company's army in 1857 and the transfer of the government to the Crown never fail to interest, and the title on our coinage, Ind: Imp :, since 1877 must be explained. The system by which we maintain ourselves, so few amongst so

many, may come next. A British army of 75,000 men and a native army of 155,000, commanded by British officers, an admirable Civil Service with British magistrates or collectors in charge of districts, a revenue mainly dependent on the land tax and duties on opium and salt, officers in charge of the forests and of those public works of irrigation, road and railway construction, which contribute to prosperity in good times and fight for the people in times of famine, all these open out a vast expanse of ideas.

Nor can we omit the many native states with their independent positions and their jealousy of British interference, their governments, the British Residents that are attached to them, and their armed forces, some of which they are eager to see fighting side by side with the British in time of peril. It would be well to point out that we hold India largely because of the many mutually hostile elements and that should our power decay these would inevitably come into collision with each other. There is nothing of a like nature in the world. It is difficult to realize from its vastness. We can, perhaps, not excuse some of the methods by which we have gained India, we can claim honest efforts at good government.

This series of lessons on India would occupy an ordinary term at a secondary public, private or preparatory school. It can be adapted to the longer periods of an elementary one. It brings before us the leading features of the subject. It would not be the least interesting part of a term's work. The criticism of a friend brought up in the old style of Geography teaching, that it reads more like a story than "the dull stuff he was made to learn," shows that we have made some advance.

There is much useful information in *Hunter's Imperial Gazetteer* in Vol. VI., especially condensed.

Illustrations of the recent tour of the Prince and Princess of Wales have been appearing in the illustrated papers, and the special correspondent of the *Standard* has published his letters, worthy of his reputation, entitled *A Vision of India*, by Sidney Low.

Lord Roberts' *Forty-one Years in India*; E. F. Knight's *Where Three Empires Meet*; Colonel Malleson's shorter *History*

of the Indian Mutiny ; T. R. E. Holmes's *History of the Mutiny*, are all of interest.

Longman's Geographical Series, Book III, has a good chapter on India.

CHAPTER IV

OF LITERATURE AND OUR SUBJECT

I. FICTION.

THERE are many books, as we have seen, which profess to deal especially with the more or less technical parts of Geography. There is also a wide field for the reader in fiction. In *Mudie's Select Library Catalogue* (published at 1s. 6d., and well worth buying) will be found in "Fiction, Part III," a selection classified among other things "topographical," but as this contains forty-four pages it is rather long for quotation. I should think that a classified list of those of value would be very useful, and in the Spring number of the *Geographical Teacher* I am glad to see that suggestion made by Mr. Unstead at the end of his article on Geographical Novels, which is limited to those dealing with one portion of the Pacific. Practically Melville's *Typee* and *Omee*, from which he quotes, are descriptions of Melville's adventures.

He cites, however, R. L. Stevenson's *Ebb Tide* and *Island Nights' Entertainments*, and Louis Becke, whose work has brought home to us all life on the atolls. Of other lands not so far away, Black¹ in the *Princess of Thule* and the *Maid of Killeena*, and McLeod in more than one tale of the Hebrides tell us much, and as for Galloway is it not written of by Mr. Crockett?

The Duke of Britain, by Sir Herbert Maxwell, treats also of that district, but in much earlier times. I hope every one has read *Kidnapped*, by R. L. Stevenson. There has been much written about the country north of the Tweed since Sir Walter

¹ "There are passages in Black's writings which in their power of conjuring up before the mind of the reader the scenes they describe are not surpassed by anything that Ruskin himself ever wrote." (*Sir Wemyss Reid's Life*, p. 207.)

led the way. We owe to him, at least, many a passage that bears on the geography of his beloved land, and *Marmion* gives us many a name to find as we follow that knight's mission to the north. The stranger who looks on Flodden Field will think of Sir Walter and owe as much to his description as to the thoughtful care of one who is said to have planted groves of trees to represent the contending armies. Tantallon, Norham, Ford, all live in his poetry. The Island of the Lady of the Lake is with us still, and one likes to think of Sir Walter riding the very course that King James was to take in his story.

Across the sea in Ireland *A Man's Foes* has given us a good idea of the siege of Derry.

Froude has given us *Two Chiefs of Dunboy*, and if one wants local colour to realize the nature of the Irish there are the tales of Miss Edgeworth, Carleton's *Traits of the Irish Peasantry*, and the works of Miss Barlow. Many of us still delight in *Lorna Doone*, and the works of Thomas Hardy have given a fresh meaning to the word "Wessex." Eden Phillpotts tells us about Dartmoor, Quiller Couch about the *Delectable Duchy*, and Charles Kingsley gives us a classic in *Westward Ho!* Readers of Sir Walter Besant will know how much he did for London. Mrs. Humphrey Ward has given us *Robert Elsmere* and *Helbeck of Bannisdale*. We have the much written about Brontes to tell us of their Yorkshire home, and Mrs. Gaskell of life in Manchester. Different countries, Russia in the *Sowers*, Spain in *In Kedar's Tents*, Sicily in *The Isle of Unrest*, Poland in *The Vultures*, are brought before us by the writer whom we have just lost and loved under the name of Seton Merri-man, while Marion Crawford in many books has told us of Italy, and a very modern style of a very modern craze—Motoring—is shown in *My Friend the Chauffeur*, where we are carried, with some excellent photographs, from the Riviera through Piedmont, Milan, Como, Dalmatia and Montenegro. Of America there are plenty and to spare connected with almost every State, and largely influenced by the Revolution and the Civil War. Bret Harte has made us familiar with the mining populations, Wendell Holmes and many others with Boston, G. W. Cable with Louisiana, Miss Johnston with the Old Dominion, Gilbert Parker has written of Quebec and French Canada, and Burgin of Ranch life. That remarkable writer, Jack London, takes

us into Klondyke and stamps the icy scenery on our memory, as for instance in *The Call of the Wild*. *The Magnetic North* is another story by C. E. Raimond (Elizabeth Robins) of the perils of the country. One striking passage is that where the Jesuit priest says that Alaska is bigger than the Atlantic States from Maine to Louisiana with half of Texas thrown in, that is equal to England, Ireland, Scotland, France and Italy. It has mountains seventeen, eighteen and nineteen thousand feet high and a giant river in the Yukon 2,000 miles long.

The Garden of Allah takes us from the far north to the mystery of the Sahara. Another view of this part of Africa is given by John Oxenham in the striking story entitled *The Gates of the Desert*. *The Story of a South African Farm* and the many books of Rider Haggard and B. Mitford deal with South Africa from the days of Solomon to the Boers and Zulus of to-day. Australia has its own novelists in Horning, in Mrs. Campbell Praed and Ralph Boldrewood, while India has such writers as Mrs. Steel, B. M. Croker and Rudyard Kipling, and if the last be first in style, he will let ladies be first in this case. The tale of novels bearing on Geography has yet to be told. The few we have suggested will lead to the discovery of many others. It may be added that, as I have pointed out in the first part, poetry has many references to the subject. Mr. Sharp's *Literary Geography* will well repay perusal.

II. BOOKS OF TRAVEL AND NEWSPAPERS.

It almost goes without saying that concerning the many districts affected by man's settlements and in those over which he can only travel without settlement we are surrounded by works of information. A library of magnitude would scarcely contain them. Reference has already been made to the list of books in Geikie's *Teaching of Geography*. That might well be at every teacher's elbow. It cannot be of much use to the teacher, limited to a set portion of the Earth's surface by a syllabus, to furnish him here with a catalogue of such dimensions as even Mudie's.¹ He will be able to find from it what he

¹ *Mudie's Select Library Catalogue*, 1s. 6d., 30-34, New Oxford Street.

needs and more. He will not find Geography in the general index and perhaps consider it another slight on the subject, but the names of countries will be a guide. If he gets hold of such a book as *The Nile Quest*, by Sir H. H. Johnston, he will learn much, for it compresses a vast amount of information into its limits. A great impression will be made on him by this book. *Problems of the Far East*, by Lord Curzon, is valuable, and so are Dr. Sven Hedin's books *Through Asia* and *Through Central Asia and Tibet*. *Farthest North*, by Nansen, is good. In studying any particular division of the Earth's surface it will be well to make a list of the leading books of travel. For instance, in Africa the earlier work of Mungo Park and Claperton, The Travels of Bruce and Livingstone followed by Cameron's *Across Africa* and Stanley's *Through the Dark Continent*. Much of interest is in the works of Sir Samuel Baker and Captain Speke, and in later days in Joseph Thomson and Sir H. H. Johnston. One soon becomes familiar with the caravan routes and salient points of travel, e.g. with Ujiji and with Khartoum. One learns to expect to find the traveller starting from Zanzibar or Cairo and to read of the endless difficulties of transport, the stumbling block to all travellers. Perhaps in an age of impatience one is not a little surprised at the continuous trials of patience which accompany even the well equipped. Incidents, like the loss of Schweinfurth's notes and observations, and the pluck with which he continued without instruments to make out his maps, impress themselves upon the reader. Gradually the country under observation ceases to be an unmeaning aggregation of names, and becomes a living reality, and allowing for much greater distances not less familiar than our native islands.

Of late years the Press has been well served by special correspondents in our various wars. I need hardly mention Steevens' name. *With Kitchener to Khartoum* is most clear. As I write, a book by Mr. Ashmead Bartlett has come out on the siege of Port Arthur which is very highly praised. There is quite a little library of books written by men like Russell, Forbes, Burleigh and Villiers—the old guard of journalists abroad. I might add that there pours forth from the illustrated papers every week information which in the shape of maps as well as in pictures is most appreciated by learners of every age.

The daily papers seldom fail to contain articles which are valuable contributions to the subject. The reports of the weather are always useful, if forecasts are not, and the columns of shipping advertisements and intelligence are not seldom full of interest. I am well aware that many teachers have not much time to read the papers, but perhaps they will be encouraged to look for something of interest by fortunate happenings on treasure.

NOTE ON THE SYLLABUS

BOARD OF EDUCATION FORM 124.

The main purpose of the *Regulations for Secondary Schools* is : (a) to systematize the preparation to be gone through *before* a Four Year Course ; (b) to aid teachers; and (c) to suggest a Four Year Course.

(a) The first suggestion is that children should possess a general " knowledge of the great land masses of the world, the disposition of highlands and lowlands, the chief river valleys, and the names and positions of great countries and of a few of the chief towns in each, with a more detailed knowledge of the geography of the British Isles." Also that they should have " some knowledge of elementary Physiography including the Earth's shape, simple map making, the compass ; day, night and the seasons ; formation of mountains and rivers ; the oceans ; climate ; minerals ; plant and animal life." This Preliminary Instruction is to be divided into *two stages* :

- I. Simple local geography and the general relief of the Globe.
- II. The continents in order and the British Isles.

The children are to go through these stages between the ages of eight and ten, and ten and twelve. The only comments necessary are that such instruction would bring a very completely equipped child of twelve to the Four Year Course, and that it is doubtful, in the first of the two stages, viz. simple local geography and the general relief, if it would not become monotonous to the children to study without any countries and names. Is it possible to interest them for two years in abstractions like climatic influences and the general distribution of rainfall ? Is not the average child keener to know about Polar bears than Arctic temperatures ? Would not merely impersonal knowledge be hard to convey ? An intelligent child could not fail to see maps on all sides. Is it proposed to keep him to the study of forms ? It is not exactly clear from the foregoing " stages " in which stage The Elementary Physiography is to be introduced. In fact it is not mentioned. But taking the two together, the " outlines " and the " stages," the general result is a very complete curriculum before the entrance on the course, and one which would require not only intelligent children but intelligent teachers, for elementary instruction is not always the simplest, and if foundations are to be laid on such an extensive scale they will have to be solid. So much of this earlier work will depend on the skill of the teacher, that heads of schools will have to teach themselves or others will have to be very carefully trained.

(b) The advice to teachers is headed by a definition of their aim which should be "to produce a vivid impression of connected facts through considerations such as those of cause and effect and practical bearing of the facts selected." This sentence implies a good deal. It is perhaps somewhat oracular. It is not exactly clear how the teacher is to gain the "special knowledge" which is desired for him in a later paragraph, and that is therefore the object of these pages. He is to make a plan of the teaching of the Term and use text-books if necessary. He is to verify statistics and bring information on commercial and political geography up to date. A number of exercises are suggested in the shape of questions and answers for subject matter in the scholars' notebooks, notes and diagrams which should contain worked out problems and original maps and plans. Each map or diagram should illustrate a lesson from a particular point of view, e.g. physical or political, or commercial. In fact he is to make a definite study of the subject.

(c) The Four Year Course.

1st Year (12-13) :

Term I. (a) The great water partings of the world. (b)
The British Isles, revision.

Term II. Europe in general, coasts, surface and climate.

Term III. Europe in detail.

2nd Year (13-14) :

Term I. The great oceans.

Term II. America.

Term III. Africa.

3rd Year (14-15) :

Term I. Flora and Fauna, revision.

Term II. Asia and Australasia in general.

Term III. Asia and Australasia in detail.

4th Year (15-16) :

Term I. Minerals : Man and his markets.

Term II. British Isles (commercial.)

Term III. The distribution of the human race, Nationalities, Political Geography, History of Geography.

This scheme is given as one of many ways of dealing with the subject matter.

Note.—Compare syllabus of instruction in Geography, Royal Geographical Society, 1903.

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